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ORIGINAL ARTICLES.

THE EVOLUTION OF THE CYSTIC KIDNEY.

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Synonyms:—Sacculated Kidney, Surgical Kidney, Pyonephrosis, Hydronephrosis

By "Cystic Kidney" I mean that condition of the organ in which it is more or less completely converted into a number of cavities, each cavity containing a fluid or semi-fluid matter, and possibly solid matter as well. The number of these cavities varies greatly, sometimes being limited to half a dozen or even less, sometimes reaching several hundreds. The size of the cystic kidney varies greatly: sometimes it is not enlarged at all; at other times it is enlarged to two or three times its normal dimensions.

The term "Evolution," although adopted as the title of this paper on the spur of the moment, seems to describe what occurs in renal cystogenesis most admirably, since it is really an "unrolling" or "unfolding" of the renal structure, as it slowly yields to the pressure of the fluid accumulating in the cysts.

It is the purpose of this paper to classify the causes of cystic kidney, and to briefly describe the mechanism by which each one produces its result. Of course in attempting to treat so large a subject within the time allotted to papers before this section much of detail must be omitted, but I think the essential facts can be stated without trespassing too much on your patience.

I think the causes of cystic or sacculated kidney may be classified as follows:

1. *Diathetic Causes*—with these varieties:
a. Excess of saline elements of the urine.
b. Tuberculosis.
c. Carcinoma.
2. *Congenital Causes.*
a. Floating kidney, with consequent twist of ureter.
b. Congenital Hydronephrosis.
c. Congenital degeneration of Glomeruli.
3. *Mechanical Obstruction* consequent upon disease of pelvic organs.
4. *Traumatic Causes.*
5. *Pathogenic Cysts.*
a. Dermoid.
b. Hydatid.
c. Cystic Metamorphosis.

1. Cystic kidney produced by "diathetic causes." By far the greater number of cystic or surgical kidneys occur during the active period of life, when the peculiar "diatheses" which lead to them are most likely to manifest themselves, and this is peculiarly true of the first group of cases—those produced by:

a. An "excess of the saline elements of the urine." In clinical experience we find that the "lithic acid" and the "phosphatic" diatheses are those which are most prolific of renal lesions, and their modus operandi is substantially the same. It is very easily explained. When assimilation and tissue waste are carried on in physiological proportion to each other—provided retrograde metamorphosis takes place in accordance with physiological laws—the urine is never "saturated" with solid matter, and no precipitation can take place in the renal tubules; but unfortunately these conditions do not always obtain. Certain grave departures from the normal course of assimilation and disassimilation occur, whereof the consequence is the super-saturation of the urine with saline elements. When this happens there can be but one result, namely, the saline elements, which are in greater excess, are precipitated within the lumen of the tubuli uriniferi, and mechanical obstruction of the invaded tubule follows. At first but a few particles of the given salt are thrown down, but these being angular or spiculate, easily insinuate themselves between the angles of the epithelial cells and thus become fixed at their point of lodgment. Two results now follow:

First, the foreign body, the saline particle, acts as a local irritant to the epithelial cells of the tubule, and they respond by entering into that pathological condition which we know as "cloudy swelling," which means that they enlarge and also that they throw off a glutinous secretion, which materially aids in obstructing the tubule; secondly, that the primary granule or crystal acts

as a point of attraction for other crystals, and thus a minute intra-tubal calculus is speedily formed. The tubule is now effectually occluded, but if the occlusion takes place below the convoluted portion, secretion of urine still goes on; meantime the tubule becomes inflamed, and then dilated, until a small cavity is excavated, which is filled by pus and urine, and the process of developing a multitude of similar cavities through the agency of similar causes goes on uninterruptedly, until the organ consists only of a series of cavities or excavations, from the size of a pin's head to that of a walnut, and we have the so-called "cystic" or "surgical" kidney. The calculi are not necessarily retained in the renal tubules; in point of fact, they are in most cases forced out of the tubules by the pressure of the urine accumulating above them, but not until the process of dilatation is well advanced, and the structure of the tubule is materially changed—so changed, indeed, that recovery is impossible. On the other hand, the calculi are not infrequently retained in the tubules, where they grow by accretion, until they acquire dimensions sufficient to produce deep-seated constant pain by their encroachments upon the renal tissues. In such cases the pressure of the calculi occludes many tubuli, and the result is at first a "multilocular" cyst, but later a single large cyst or cavity, because the intervening cyst walls are gradually broken down. Of late years many such cases have been radically cured by "nephrolithotomy," an operation which Henry Morris, of London, has done so much to establish.

b. "Tuberculous Kidney." Tuberculous disease of the kidney does not often occur, as a primary disease, although those who are much in the dead houses of our hospitals find occasional specimens. But whether the deposit be primary or secondary, its behavior is substantially the same. The tuberculous deposit is most common in the cortex, and generally each deposit clusters around some arterial twig. The artery thus isolated is gradually encroached upon, until its lumen is obliterated, and the blood supply of a small area is nearly or quite cut off. Hence, rapid disintegration of the involved tissue takes place, and the retrograde changes in the tubercle itself are hastened thereby. But meantime, the outlying connective tissue, true to its own instincts, has gradually increased, and has formed an impenetrable lateral wall against the escape of the softened and semi-liquid tubercle. There is now but one avenue of escape, namely, between the straight tubes which form the medulla, and project, as "papillæ" into the pelvis of the kidney. If the contents of the tuberculous cyst escape in this direction, we are likely to have a cone-shaped cyst, with the apex of the cone pointing towards the renal pelvis. But if the tuberculous matter remains imprisoned within the cavity environed by the pathological connective tissue, we shall find a "cyst" or walled cavity filled with a putty-like or mortar-like material, which consists of tubercle corpuscles, pus cells, renal debris, and a sandy or gravelly "gritty" material, which represents the precipitated saline elements of the urine. Occasionally resorption of the liquefied contents of the cavity takes place, a solid matter remaining, perhaps to be subsequently mistaken for a true renal calculus, which of course it cannot properly be called.

c. "Carcinoma." In the adult, carcinoma of the kidney is almost never primary, and it is a well-known clinical fact that secondary manifestations of renal cancer are by no means common. Moreover, when secondary cancer of the kidney does occur, it is not generally followed by cystic degeneration; nevertheless this does occasionally happen, and in the following manner.

Cancerous deposits in the kidney occur sometimes as infiltrations, sometimes as rounded nodular deposits. In the latter case, each nodule is shortly surrounded and isolated by a fibrous capsule composed of hypertrophied connective tissue. By this process, the cancerous nodule is gradually shut off from its blood supply to an extent at least sufficient to induce early and rapid retrograde changes, particularly fatty or mucoid degeneration. Hence, the solid cancerous nodule becomes transformed into a soft pultaceous mass, or even into a dirty yellow or grayish fluid. This generally finds its way into the pelvis of the kidney, and thence into the bladder. It sometimes happens that our first intimation of renal cancer comes from a profuse discharge of purulent or bloody matter per urethram, which signalizes the fact that a cancerous nodule has undergone degeneration, and then "tunnelled" its way to the renal pelvis, whence its escape is direct and easy. It must (of course) be apparent, that each cancerous nodule which degenerates and escapes in the manner indicated, will leave a vacant cavity, or "cyst," and that the number of such "cysts" is equalled by the number of broken down nodules. Primary cancer of the kidney is a disease peculiar to childhood, "before the fourth or fifth year" [Morris.] It is almost always of the encephaloid type, and sometimes attains enormous proportions. I have seen one case in which the cancerous deposit distended the abdomen to an almost incredible degree, while the alimentary canal, the liver, and other abdominal organs were compressed and crowded so as to be hardly recognizable. In this case there were numerous cystic cavities with fluid contents of a dirty gray color, which were probably produced by the breaking down of isolated cancerous masses in the manner, and for the reasons already set forth. It must be admitted, however, that cystic excavations in cancerous kidneys are rare as compared with such excavations from

other causes; yet they have occurred, and doubtless will occur again; hence they merit a recognition in our text-books and lecture rooms.

2. "Cystic Kidney produced by Congenital Causes."

a. Migratory kidney with consequent "twist," or doubling of the ureter. I use the term migratory kidney advisedly, intending thereby to include both the "movable kidney" and the "floating kidney," whereof the anatomical and pathological distinctions are now well understood, and it is not necessary to discuss them here. Nor does it concern us particularly whether we are dealing with "movable" or "floating" kidney, since they are both, and about equally, subject to the accidents which result in a distended or sacculated kidney. The liability of the ureter to become twisted or doubled depends very much upon the range and movement which the kidney possesses. If the renal pedicle is short, and the kidney is confined in the post-peritoneal ileo-lumbar space, the danger is quite insignificant, although it does, even then, exist; on the other hand, if the pedicle is long and the organ is situated between the peritoneal folds which are known as the "mesonephron," the range of movement must necessarily be extensive, and the danger of ureteral obstruction must be much greater. There are two methods in which stenosis of the ureter may occur in "migratory kidney." First, "when the kidney drops forwards or downwards, as after long standing or sitting, the course of the ureter becomes so deflected and curved upon itself that the urine cannot flow along it." [Morris.]

A moment's reflection will make this clear. When the kidney "drops downward or forward," so as to bring the pedicle "taut," the ureter is made to describe an acute angle which has the effect of collapsing it, and producing more or less complete temporary occlusion. Meantime the secretion of urine goes on, the proximal portion of the ureter and the renal pelvis are in turn distended, the papillæ are pushed back and flattened, the calices are dilated, and the process of the "evolution" of the cystic kidney is fairly under way. But in a short time, owing to changes in the position of the body, or manipulation by the patient or his surgeon, or possibly by the distending force of the accumulating urine, the kidney is replaced, the ureter is rendered pervious again, and the accumulated urine disappears. Sooner or later the same series of events occurs again and again, each period of occlusion adding to the renal dilatation already existing, until the kidney is literally converted into a globular cyst, sometimes quite distinctly lobulated. Such cases used to be mistaken for ovarian tumors, but owing to our general increase of knowledge regarding abdominal tumors and their diagnosis, it is not likely to occur again. The twisted ureter acts in a precisely similar way, except that the dilatation of the kidney goes on quite slowly, because the twist is generally no more than is accomplished by half a revolution of the kidney, and is therefore more frequently amenable to spontaneous restoration than the collapsed ureter above described. It is a clinical fact that nearly every migratory kidney is found more or less dilated when the organ is examined post-mortem, and that many an abdominal tumor which was a source of perplexity to the patient and her medical advisers, has been thus explained. I think a dilated migratory kidney is more likely to turn out a hydronephrosis than a pyonephrosis—at least such has been my own observation. I am quite well aware of the fact that the movable kidney is not always congenital, but, entertaining the opinion that the exceptions are exceedingly rare, I think I am fully warranted in including this class of cases among those of congenital origin.

b. "Congenital Hydronephrosis." This rare and singular form of renal lesion is so seldom seen, that but few of us can speak of it from experience. Yet it must be recognized as one of the causes of cystic kidney. It depends upon some malformation of the kidney or its appendages. As Morris and Dickenson observe, in the majority of cases, both kidneys are involved, and the cause lies in some fault at the cystic outlet of the ureter. But this is not always the case, since unilateral hydronephrosis is well-known among the surgeons, and several cases are recorded. The malformation which produces hydronephrosis may be at the pelvic extremity of the ureter, as when a valve-like fold of membrane closes the pelvic orifice of the ureter; or by some abnormality of the ureter itself—an obliquity, contraction, or arrest of development; or by occlusion, partial or complete, of the cystic orifice of the ureter. Or some abnormality of the renal vessels in consequence of which the ureter is compressed, may be the apparent cause. When both kidneys are involved of course an immediately fatal result must be the consequence; but when the disease is unilateral, the child is in no immediate danger. I have now a case of unilateral hydronephrosis under my care, the patient being an otherwise healthy boy 20 months old. The tumor occupies a large part of the abdominal area, and is so hard as to suggest a tumor with solid contents, instead of a hydronephrosis. Nevertheless, several weeks ago, when he was first presented at my clinic at St. Lukes Hospital, I drew off 40 ounces of urine by aspiration, using strict antiseptic precautions; but the cyst rapidly filled again, and in a week or ten days seemed as large as ever.

c. "General Congenital Cystic Degeneration." At rare intervals an infant is born or is instrumentally delivered with an enormously distended abdomen, due to the fact that the kidney has

been converted into a "congeries of cysts," a process of general cystic degeneration. Such a case is recorded in the *Medical Record*, for Jan. 21, 1888, and a few similar cases are on record. They are regarded, and probably correctly, as a peculiar form of cystic degeneration of malpighian bodies, but occasionally the convoluted tubules appear to be involved. In other words, the functional or potential portions of the kidneys only seem liable to this form of degeneration, and even then the process probably begins during intra-uterine life. The results are that the kidney is converted into a vast number of cysts, varying in size from those almost too small to be seen by the naked eye up to those as large as a hazelnut; that by the growth of these cysts and their progressive distension the kidney is greatly enlarged, and the abdomen greatly distended. The disease usually invades both kidneys, and is frequently associated with similar degeneration of other organs.

3. "Cystic Disease of the Kidney Produced by Mechanical Obstruction Consequent upon Disease of the Pelvic Organs."

a. Diseases of the bladder. Any form of cystic disease which produces thickening of its wall or intra-mural infiltration, so as to partially occlude the orifice of the ureters, is capable of inducing cystic kidney. And the cystic orifice of the ureter is very easily rendered impervious. It will be remembered that the ureter before opening into the bladder, passes for some distance between the walls thereof; hence the cystic orifice of the ureter is diagonal or valvular, an arrangement which retains the urine in the bladder when once it has arrived there. But when the bladder is thickened and corrugated by inflammation, or invaded by morbid growths, the cystic orifice of the ureter is more or less completely closed by pressure, and the entrance of urine rendered difficult and nearly impossible. Under these circumstances the ureter, the pelvis of the kidney, and finally the kidney itself, yield to the distending force of the retained urine, and a retention cyst, often of enormous dimensions, is the result. The diseases of the bladder most likely to produce cystic kidney are inflammation, carcinoma, sarcoma and tuberculosis.

b. Diseases of the uterus and its appendages. I have lately seen a case of double hydronephrosis in a woman almost 40 years of age, whereof the only discoverable cause was a compression of the ureters by a much enlarged and prolapsed uterus. The cervix uteri was enormously hypertrophied, tilted up against the bladder and fixed in this position by adhesions, so that the ureters were constantly although not severely compressed thereby. The consequence was a partial retention of the urine in the renal pelvis, and the slow but gradual extinction of the kidney, until nothing of the renal structure remained except a thin layer of cortical structure just beneath the thickened capsule. Malignant disease of the uterus not infrequently produces cystic distension of the kidney; tumors of the broad ligament generally cause more or less complete stenosis of the corresponding ureter; ovarian fibroids have been known to produce the same consequences, and pelvic cellulitis, especially when followed by extensive suppuration, is very likely to be followed by gradual closure of one or both ureters, and its inevitable results. In short, any pelvic disease which is followed by pathological new formations, or the dislocation of the pelvic organs, may produce compression of the ureter and cystic kidney.

4. Traumatic Causes. The traumatic causes of cystic kidney cannot be formally classified. Any injury of the kidney may result in cystic disease—but how and why we cannot always explain. For example, I have lately seen the case of a young man who fell down a rough and precipitous hillside, thereby receiving a severe injury of the right kidney, which was followed by pain, tenderness and hæmaturia. These symptoms shortly subsided and the patient regarded himself as quite well. Yet the kidney remained slightly tender; he had occasional but not severe attacks of nephralgia; and four years after the injury he died after nephrotomy, the kidney being an enormous multiple abscess. I have seen several cases of cystic kidney attributable to traumatic causes, although it is impossible to explain how an injury to an organ should set in operation that train of pathological events which result in a multiple cyst. This fact we must recognize in all its pathological, diagnostic and therapeutic bearings.

5. "Pathogenic Cysts."

a. "Dermoid Cysts." The dermoid cyst, so far as I am aware, has never been found in the human kidney. It has without doubt occurred. They have repeatedly been found in the kidneys of the lower mammalia, and there is no reason why they should not be found in man. On the other hand, reasoning from the standpoint of analogy, and having due regard for the teachings of the laws of pathology, so far as we understand them, we have every reason to believe that the dermoid cyst has invaded the human kidney and will do so again. Therefore I am of the belief that the dermoid cyst ought to be regarded as one of the forms of disease to which the kidney is liable, in spite of the fact that the opinion cannot yet be authenticated by experience.

b. "Hydatids." In the language of Roberts, "Hydatids of the kidney are comparatively rare; they are much less common than hydatids in the liver, and even in the lungs; but they are more frequent than hydatids in the other organs and tissues of the body." These cysts pursue in the kidney precisely the same course that they do in other organs, except the intestinal canal. That is, they become filled with echinococci by continuous endogenous development until a parent cyst of

large, and sometimes enormous proportions, is the result. But the echinococci never advance beyond the first stage of development, and their reproduction may be arrested; hence it follows that an hydatid cyst may remain in the kidney for years without exciting any pronounced symptoms, or involving their host in any imminent danger.

c. "General Cystic Metamorphosis." Although this is a rare form of disease, nearly all recent writers describe it and produce illustrative cases. The kidney—or generally both kidneys—are enlarged and transformed into a multitude of cysts, which range "from the size of a pin's head to that of an orange." (Roberts.) They contain a reddish or yellow limpid fluid, which is always highly albuminous, and contains epithelial cells much changed and degenerated by maceration. According to the best observations of the best observers, they are derived both from altered and degenerated malpighian bodies, and altered and degenerated segments of convoluted tubes.

The cause of this peculiar analogue of the congenital cystic kidney is but little understood, but it is probably of the nature of collagenous degeneration of the renal cells.

In conclusion, I have to express my regret that so much remains to be learned concerning cystic disease in general, and of the renal cysts in particular, and to add the hope that in the near future our knowledge will be more definite and accurate upon this as upon all other subjects which interest the working pathologist.

ABSTRACTS OF CONTRIBUTIONS TO TERATOLOGY.

DEFINITION OF TERATOLOGY. GIANTS AND DWARFS. CLASSIFICATION OF MONSTROSITIES. FOUR-LEGGED CHILD, J. MYRTLE CORBAN. SIAMESE TWINS. HUNGARIAN SISTERS. SOUTHERN NIGHTINGALE. SOUTH CAROLINA TWINS, MILLIE AND CHRISTINE. JOHN ALLEN. HERMAPHRODITISM. MISS EMILY LAUNDRY, THE LOUISIANA BEARDED GIRL.

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DEFINITION OF TERATOLOGY.

The word Teratology, which we owe to Geoffrey St. Hillaire, literally means the *Science of Monsters*, and in the present article we shall apply the term to the *doctrine of congenital deformities*. Teratology, in a scientific sense, constitutes a part of *Pathological Anatomy*, which comprises all the anomalies of the organization; those which occur during *intra-uterine* life are called *congenital*, and those which arise during *extra-uterine* life, *acquired*. What are commonly called *monsters* are most generally referable to the former; that, is to the imperfections of the primative formation.

Teratology, therefore, as a department of Morphological Science treats of the deviations from the normal development of the embryo.

The term *embryo* is commonly limited in human anatomy to the ovum in the first three months of its *intra*-uterine life, in which it is still developing or acquiring the rudiments of its form; the term *fœtus* being applied to it in the subsequent months during which the organism grows in the lines of development already laid down.

It is mostly in the first, or embryonic, period that these deviations from the normal life occur, which present themselves as monstrosities at the time of birth.

CLASSIFICATION OF MONSTROSITIES.

The most usual grouping originally suggested by Buffon (1800) is into *Monstra per excessum* and *Monstra per defectum*, and *Monstra per fabrican alienum*. But some writers have placed the more simple cases of excess and defect side by side, and separate the double monsters from the single; the theory of the former being a distinct chapter in Teratology.

The origin of monstrosities has been referred to two main causes:

1. To the original malformation of the germ.
2. To the subsequent deformation of the embryo by causes operating on its development.

It is evident that giants and dwarfs are not referable to the action of these causes, because in both forms of monstrosity nothing peculiar may be noticed at birth. The infant of the future giant may be small and well-proportioned, and that of the dwarf large and well-proportioned.

CAUSES OF CONGENITAL ANOMALIES.

1. Original malformation of the germ.
2. Deformation of the originally well-formed germ.
3. Diseases of the ovum and fœtus.
4. Imperfect development of the fœtus from some remote or unknown cause.

CLASSIFICATION OF MONSTROSITIES.

1. Malformation of the ovum.

(a). Molabostryoides.

(b). Separation of the placenta into lobes or cotyledons.

(c). The vesicles of the umbilical cord are separated near the placenta, and meet at a considerable distance from it.

(d). The umbilical cord too long.

(e). The umbilical cord too short.

(f). Absence of one of the umbilical arteries.

(g). Increased number of the vesicles of the cord.

(h). Persistence of the umbilical vesicle.

(i). Constriction of the umbilical cord.

(j). Umbilical cord too thick.

MALFORMATION OF THE FŒTUS.

(A) Monstrosities produced by the arrest of development.

1. Non-closure of the anterior parts of the body: (a) fissure of the whole anterior wall of the body; (b) fissure of the thorax; (c) fissure of the anterior abdominal wall; (d) fissure of the pubic and hypergastric regions; (e) cervical fissure; (f) fissure of the face.

2. Fissure of the skull: (a) want of the brain and exposure of the whole basis of the skull; (b) the denuded surface of the *basis cranii*, occupied by a spongy substance instead of brain; (c) the surface of the *basis cranii* only partially denuded, a spongy tumor occupying the place of the brain; (d) the skull flat, but having an opening through which the brain protrudes, as a hernia.

3. Fissure of the back part of the body; (a) Hydrorrachis, and spina-bifida.

4. Hydrocephalus congenitus.

5. Acephalæ, or fœtus without a head.

6. Want and defective formation of the trunk —acomia.

7. Defective formation of the extremities.

8. Cyclopia.

9. Deficiency of the lower jaw—monoia.

B. MONSTROSITIES PRODUCED BY AN EXCESS OF DEVELOPMENT.

1. Fœtus in fœtu.

2. Double monsters—heteradelpha.

3. Double monsters; (a) anterior duplicity; (b) lateral duplicity; (c) inferior duplicity; (d) posterior duplicity; (e) superior duplicity.

4. Triple monsters.

FOUR-LEGGED CHILD, J. MYRTLE CORBAN.

One of the most remarkable instances of monstrosity which has come under my observation is that of the four-legged child (infant), J. Myrtle Corban, examined by the late Professor Paul F. Eve and the writer, in Nashville, Tenn., June 16, 1868.

The following, Figure No. 1, represents the appearance of this monstrosity.

FIGURE 1.—Four-legged female infant, J. Myrtle Corban, from photograph taken in Nashville, Tenn., June 16, 1868, about twenty years ago.

The following description of the infant, J. Myrtle Corban, was prepared jointly by the late Professor Paul F. Eve and myself, June 16, 1868.

INVESTIGATION OF THE FOUR-LEGGED CHILD, J. MYRTLE CORBAN.

Nashville, Tenn., June 16, 1868.—The undersigned, in response to the request of a number of physicians and the relatives and friends of the unfortunate subject of this investigation, give the following testimony: The infant, J. Myrtle Corban, has four legs and two distinct external female organs of generation, with two external openings of the urethra and two external openings of the double rectum. The external genito-urinary organs are as distinct as if they belonged to two separate human beings. The fæces and urine are passed (most generally simultaneously, particularly the urine), from both external urinary and intestinal openings, situated respectively between the left and right pairs of legs.

The head and trunk are those of a living, well-developed, healthy, active infant of about five weeks, whilst the lower portion of the body is divided into the members of two distinct individuals, near the junction of the spinal column with the *os sacrum*. As far as our examination could be prosecuted in the living child, we are led to the belief that the lower portion of the spinal column is divided or cleft, and that there are *two pelvic arches supporting the four limbs*, which are situated upon the same plane.

Photographs of this infant have been made by the advice and under the supervision of one of our number.

The reality in this case surpasses expectation, and we are of the opinion that this interesting *living monstrosity* exceeds in its curious manifestation of the powers of nature in abnormal productions, the celebrated "Siamese Twins."

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Prof. of Surgery, University of Nashville.

FURTHER REMARKS BY PROFESSORS JONES AND EVE.

Josephine Myrtle is the third offspring of W. H. and Nancy Corban, aged 25 and 34, the wife being the senior by nine years. They are so much alike in appearance, having red hair, blue eyes and very fair complexion, as to produce the impression of their being blood kin, which, however, is not the case. Mrs. Corban is from North Alabama, had borne one child to a former husband, the child having dark coloring, and resembling mostly the father, who had black hair and eyes. Her three children are all girls, the one already alluded to, now 6 years old, another 3, and this *infant monstrosity*, now to be more minutely described, born the 12th of May, 1868, in Lincoln county, Tennessee, five weeks ago.

Mr. Corban is a Georgian, served in the Confederate army through the war, and was severely wounded in the right arm and left hand. The parents are in fair health, though the mother is *anæmic*. She recollects no fright or disturbance during her last pregnancy. The presentation was fortunately the head, which accounts for the preservation of the life of the child. It would be curious to speculate on the trouble which might have been produced had the feet or breach presented, while the result, in all probability, would have proved fatal to the infant, and possibly to the mother. Mrs. Corban says that there was nothing peculiar in the labor or delivery. When three weeks old the child weighed ten pounds. It now nurses healthily, is thriving well, and we saw it urinate simultaneously, between the *two pairs of labia of the two vaginæ*, situated about six inches apart. From the crown of the head to the *umbilicus* measures twelve inches, and from this point to the toes of the right and left external feet, eleven inches. From the *umbilicus* up all is natural and well-formed; all below this extraordinary and unnatural. An inch below the navel is a mark of an apparent failure for a second one. There are four distinct pretty well developed lower extremities. They exist in pairs on both sides of the median line which resembles the cleft of an ordinary pair of legs; but here there are no marks whatever of *anus* or *genital* organs, and upon pressure we discover no *os coccygis* or *sacrum*. The outer legs of both sides are the most natural of the four (though the foot of the right one is clubbed), but are widely separated by the two supernumerary ones, which are less developed, except at their junction with the body, from which they taper to the feet and toes more diminutive, and which are turned inwards. One toe is bifid on the left extra inward extremity. At birth these extra legs were folded flat upon the abdomen. We are led to believe that there are *two uteri as well as two rècti;* in fact that the pelvic organs are double. Of course a minute dissection would alone expose the true condition of these parts.

Should this infant reach maturity and the internal generative organs be double, there is nothing to prevent conception on both sides. The first difficulty will, however, be in her walking. The outer, or external legs, may be used for progression; the inner, or inturned ones, probably never. These might be successfully amputated at the knees, or higher up.

One of us recollects being in London, in January, 1830, at an exhibition of the Siamese Twins, when Sir Astley Cooper gave an opinion adverse to an operation with a view to separate them, but which has always appeared to us feasible and without much risk of *peritonitis*; an operation, too, which should undoubtedly be performed in case of the death of one of them, for no medical man believes in the vulgar impression that they must die simultaneously. In the present case all surgical interference, is of course, out of the question, except that alluded to—removal of the extra legs.

Cases somewhat similar to the above have occurred and been described. Rokitansky refers to two completely distinct bodies conjoined at their *ossa sacra* or *coccyges*, as in the well-known Hungarian sisters, Helena and Judith, born in 1701, who survived their twenty-second year.

Geoffrey St. Hilaire alludes to cases of a trunk with two heads, some even Janus-like, having four upper and four lower extremities.

The case, however, recalled most vividly by Josephine Myrtle, is that of Rita-Christina, well-known in Europe, and accurately described in this country years ago by Prof. Meigs. In this wonderful instance there were two heads, two necks, four arms, but only two legs; and was thus the reverse of our case. From the *umbilicus* down there was one well-formed child, but above this all the organs were double; in reality there existed two beings. The rectum and bladder were common to both, but all else in the trunk was double and distinct. One would sleep while the other played, etc., for they had *two spinal marrows*, *two brains*, *two hearts*, but the last two occupied a common *pericardium*. Unfortunately, after surviving a little over a year, one sickened and died, when the other, then in health, instantly expired.

Rita and Christina were born in Sardinia, 1829, and described by Dr. De Michaelis, Professor of Surgery in the Royal University of Sassari, and lived eighteen months.

The late Prof. J. C. Warren, of Boston, first described the Siamese twins brothers, when purchased of their mother by Capt. Coffin and Mr. Hunter (joint owners), and brought to that city, in 1829.

The infant J. Myrtle Corban thus described by Professor Paul F. Eve and myself in 1868, appears to be one and the same individual as the lady described in the following extract from the proceedings of the Alabama State Medical Association, published in the daily papers of Montgomery, Ala., April 13, 1888:

"A wonderful case of deformity or freak of nature has come to light in Alabama, which is without a parallel in history. Dr. Lewis Whaley, of Birmingham, read a paper presenting the strange case to the State Medical Association April 12, 1888. The phenomenon is in the person of Mrs. Clinton Bicknel, a white lady who resides in Alabama. She is a perfectly double woman in body and lower extremities, having four legs, four feet, and two distinct sets of physical organs. Dr. Whaley was called to see this lady some weeks ago, and was nonplussed by her strange sickness and symptoms. He called in two other physicians to assist him in making a diagnosis of the case. They found that Mrs. Bicknel was in a state of pregnancy on one side only—the left side. They

found it necessary to produce an abortion, and she gave birth to a well-formed child. Sometimes, the doctors say, the lady suffers with diarrhœa on one side and constipation on the other.

"*She was formerly Miss Josephine Myrtle Corban.* At the age of 18 she married Clinton Bicknel, and is now 20 years of age. At present she enjoys good health. Photographs of the lady were presented to the Association."

From a letter of May 17, 1888, which I have recently received from Dr. E. H. Sholl, of Birmingham, President of the Alabama State Medical Association, I am informed that "the lady, Mrs. Bicknel, of Blount Co., Ala., is the Myrtle Corban of days gone by, *attractive in face, physically well, and able to attend to all her household duties.*"

SIAMESE TWINS.

The subsequent history of the Siamese Twins shows that the eminent surgeon, Sir Astley Cooper, was correct in his opinion adverse to an operation to separate them. The Siamese Twins died in 1874, at the age of 60. They were joined by a thick fleshy ligament, from the lower end of the breast-bone (xyphoid cartilage), having the common navel in the lower border. The anatomical examination showed that a process of peritoneum extended through the ligament from one abdominal cavity to the other, and that the blood-vessels of the two livers were in free communication across the same bridge. There are one or two cases on record in which such a ligament has been cut at birth, one at least of the twins surviving.

Twins may be regarded as the physiological analogies of double monsters, and from cases like the Siamese Twins, in which the monsters have come very near to being two separate individuals, there are all grades of fusion of two individuals into one, down to the condition of a small fragment or parasitic body in a well-grown infant, *fœtus in fœtu.*

If we refer Josephine Myrtle Corban to the class of *Heteradelpha*, or *double monsters*, in which one of the fœtuses is more or less perfect, and the other merely an appendix, it is difficult if not impossible to determine the original and perfect fœtus from the appendix. It looks rather as if, during the development of the blastoderm or ovum, there had been a true fusion or division of the spinal cord, of the intestinal tube, and of the genito-urinary organs.

I have recently examined the case of a white lad about 14 years of age, a native of Louisiana, who was supposed to have scrotal hernia; but I found upon careful examination no varicocele and no hernia, but instead three large, well-developed testicles.

In another case, a married man "*who had never had but one testicle,*" I was called to see him in great pain, with rapid pulse and incessant vomiting. The attendant physician had pronounced the case to be one of strangulated hernia, and was preparing to operate; to which procedure, however, the patient objected. Upon careful examination I found a hard tumor about 1 inch in length and ¾ inch in diameter, in the right inguinal region. By careful taxis, I brought the testicle out of the ring into the scrotum, and left the patient rejoicing in his possession of two testicles.

These facts illustrate the difficulty of forming correct conclusions in the absence of the most rigid examination. In the case of the infant J. Myrtle Corban, a rigid examination of the uterine and pelvic organs was impracticable.

The pelvis is one of the commonest regions for double monsters to be joined at, and, as in the head and abdomen, the junction may be slight or total.

The Hungarian sisters, Helena and Judith, (1701–1723) were joined at the sacrum, but had the pelvic cavity and pelvic organs separate. The same condition obtained in the South Carolina negresses Millie and Christine, known as the two-headed nightingale, and in the other recent case of the Bohemian sisters, Rosalie and Josepha.

South Carolina Negresses, Millie and Christine; Two-headed Nightingale.—I had the opportunity of examining these South Carolina twins during their exhibition in New Orleans, about the year 1869. There was evident fusion and decussation of the nervous elements of the spinal cord in the sacral region. Pressure, pricking or pinching of the lower extremities of either twin was distinctly felt by the other. This was not the case with the upper extremities. Impressions made on the hands, arms, head or neck of one twin were not felt or recognized by the other.

The following is an accurate representation of this interesting double monster, or female negro twins united at the sacrum.

FIGURE 2.—SOUTH CAROLINA TWINS, OR NEGRO DOUBLE-HEADED NIGHTINGALE, "MILLIE AND CHRISSIE."

"Millie and Chrissie" were quite intelligent and sang some songs with good effect, and it was affirmed that they were but one being with but one common genital organ.

The Carolina twins, "Millie and Chrissie," were united by their lower lumbar vertebræ, sacrum and coccyx. There is a single anus and a single vulva, but two hymen and two clitorides, but very probably two vaginæ and two uteri.

The Hungarian Sisters, Helena and Judith, had but one vagina, although the upper part of that organ was divided into two, and the two intestines met in a single anus, placed between the four thighs. The Bohemian sisters, Rosalie and Josepha, in whom there is a junction of the posterior wall of the pelvis, present apparently a single anus, but a double vagina.

The four-legged child, Josephine Myrtle Corban, and the South Carolina twins, Millie and Christine, may be referred to monstrosities or malformations by excess.

Two ova may be formed in one Graafian vesicle, for double-yolk eggs are well known; but there is no evidence to show that there would form a double monstrosity; thus Professor Allen Thomson found, on incubating a dozen of such eggs, that not one produced a double embryo, while Wolff observed two completely separate fœtuses developed upon a single yolk. The arrival of two impregnated ova in the uterus at the same time, will probably give rise not to double monsters, but to twins, and their fusion seems almost impossible. Embryologists have thus been led to the opinion that monsters by excess depend chiefly on an error of development taking place in a single germ; and this idea has been supported by the fact that Allen Thomson has shown that in birds two primitive germs may be found in one yolk, and in one *area germinatera;* and in this way the most complete cases of double monstrosity can be explained. And in confirmation of this theory, the researches of Tireboullet may be cited. This observer has seen, instead of the single budding of the blastoderma, which is ordinarily developed into the embryo of the fish, two, or even three, buds marked off; and these, during the process of development, would meet at some point and in this manner produce dintinct parts of embryos, when they are separate, whilst a corresponding region of a single organism only would be found at the point of junction. According to the mode and extent of the blastodermic buds, the monsters would vary; and so would be derived all the different varieties, from a duplicity of the face or head, the upper or lower extremities, to such extreme cases as those which we have cited, as the Hungarian sisters, the Siamese twins, and the Carolina twins.

The following case presents a remarkable blending of the male and female sex:

This singular and distressing case of malformation of the genital organs must be referred to an arrest of the development of the testicles during fœtal life.

JOHN H. ALLEN, OF ILLINOIS.

Singular and Distressing Case of Malformation of Genital Organs.—The following curious case of malformation of the genital organs came under my observation during the past 10 years, and was brought before the medical class of the University of Louisiana.

J. H. Allen, aged 23, height 5 feet 7 inches, weight 150 lbs., native of Illinois, U.S.A. Dresses in male attire. Voice fine, like that of a woman. Face full and smooth, without any sign of a beard. Features resemble more nearly those of a woman. Mammæ larger than is usual in men, but smaller than those of women. Nipples small, well formed, with a distinct dark areola. No hairs around the mammæ or on the breast, which is smooth like that of a woman. With the exception of the pubes and scalp, the body is devoid of hair. The general form is that of an athletic masculine woman. Hips full, and wider than chest. Circumference around hips, 39½ inches; circumference of chest during full inspiration, 35 inches; circumference of chest during expiration, 32 inches. Has a small, well formed penis, ¾ths of an inch in length, and $1\frac{8}{10}$ths inch in circumference, with glands, frænum, prepuce, and urethral opening. The patient discharged urine through this opening in my presence. Below the penis there is a slight swelling or fulness of the integuments with a distinct raphe or tramis, like that which divides the scrotum in men into two parts, extending from the anterior part of the anus to the extremity of the penis. Upon careful examination, however, no testicles can be felt on either side of the raphe, or within any portion of the fulness which corresponds to the scrotum. A careful examination by the introduction of the finger into the rectum, whilst firm pressure was made upon the abdomen above the pubes, failed in disclosing the existence of any body corresponding to a uterus. This examination, however, was not entirely satisfactory, on account of the fulness of the abdominal walls. Buttocks and thighs full and round. The upper line of the hairy pubes terminated abruptly, without any fading off in the median line, as in the male.

I gathered the following facts from this individual:

Father of John H. Allen a strong, healthy man, native of Boston, Mass.; mother a healthy, well-formed woman, native of Pennsylvania; parents have had nine children, eight of whom were well-formed; the eldest, a woman of 25, has had three well-formed children. The subject of this exam-

ination is the second child. The third child, aged 21, is a woman and married. The remaining children were three boys and three girls; and of this number one girl and two boys have died; one boy, 13 years of age, well-formed, living; two sisters, aged respectively 10 and 2 years, living.

The subject, J. H. Allen, has always been called Johnny, and was dressed as a boy from early childhood. Was not aware that there was anything peculiar in his organization until after the age of 12 years had been attained; upon one occasion, when swimming with a number of boys, it was discovered that he was not formed like a boy, and was called by his companions "a half boy and half girl." Attended school up to the age of 17, and since this time has followed the occupation of "bar-tender." Has been taken up by the police upon several occasions as a woman in man's clothing, and after being examined has been released as a "nondescript," but has always been compelled by the authorities to wear male clothing.

Prefers the male sex, never loved a woman, regards women as sisters; has loved a man devotedly, but always feared to divulge the passion. Loves the dress of a woman and despises that of a man. When insulted feels like crying, as is common with women. When traveling on the Mississippi boats has several times been approached by rough men, who threatened rape, declaring that Johnny was a woman in man's clothing. Upon one or more occasions has excited the jealousy of women, on account of the supposed attentions of their husbands. When acting with a stock company, in the character of a woman, the wife of one of the actors who played the part of lover to Johnny, was excited to violent jealousy.

When dressed in women's clothing neither men nor women ever suspect Johnny to be anything but what the dress and general appearance would indicate.

The condition of Johnny is most distressing; it is with great difficulty that a position or work of any kind can be secured or retained, on account of being suspected as a woman in man's clothing; and when traveling in strange places, or when walking upon the streets at night, is liable to insult and arrest. His most earnest wish is to be allowed to wear women's clothing, and to enter the stage as an actress.

As far as my inquiries extended, there has not as yet been any periodic discharge of blood from the urethra, rectum, stomach, or nostrils, which could be considered as connected with the menstrual function, although the patient described certain vague and uncomfortable feelings in the abdomen and certain periodic changes of the complexion and features.

The following figures 3 and 4 represent the body and thighs and genital organs of John H. Allen.

We have in this case of John H. Allen a strange admixture of the male and female natures. The male character is represented by the minute but well-formed penis, whilst the form of the body, as shown by the photographs which I have caused

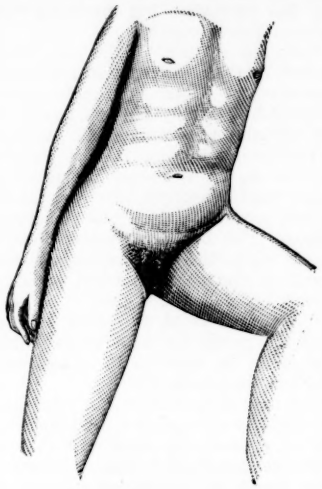

FIGURE 3.—JOHN H. ALLEN.

FIGURE 4.—JOHN H. ALLEN.

to be taken, approached more nearly to that of a female. The instincts were in like manner feminine. This case resembles a *hermaphrodite* in one sense, and in another a *natural eunuch*. In striking contrast to the case of John Allen we have the following:

MISS E. LAUNDRY, THE BEARDED GIRL OF LOUISIANA.

This hairy and bearded girl was a native of St. Landry Parish, Louisiana, where she was born in the year 1873, and was exhibited during the last year to the public, accompanied by her mother, Mrs. Laundry. Her father, who still resides in Terrebonne Parish, is a farmer. Miss Emily Laundry was covered with a remarkably thick growth of soft light brown hair, from head to foot, and possessed a full beard of brown hair. Her upper lip was covered with a light moustache. Eyes brown, hair of head light brown and abundant.

The following is an accurate representation of Miss Laundry:

FIGURE 5.—Miss Emily Laundry, the bearded and hairy girl of Louisiana, 1887.

It will be seen that Miss Laundry, at the age of 13, when this photograph was taken, presented the appearance of a stout, plump, well formed young woman, well developed mammæ and rounded hips.

Miss Laundry was well formed and well grown for her age. The preceding engraving represents her in the 13th year of her age, and shortly before her death, which occurred in Detroit, Mich., from diphtheria contracted in Minneapolis, April 20, 1887. The body was embalmed and shipped to New Orleans, where it arrived April 22, 1887. Through the courtesy of the undertaker I was enabled to make a careful examination of the embalmed body, and found that the mammæ and female organs were characteristic, and that with the exception of the beard, moustache, and excessive growth of hair, she was what she was represented to be, a well formed young woman.

A relative informed me that Miss Laundry had menstruated at three years of age, and that when her mother was pregnant she constantly gazed upon an oil painting of Christ, whose face was represented with a full beard. The child was born with a beard, and the mother attributed this "freak of nature to the effects of the portrait of Christ." On her father's side many of the males were said to be characterized by an excessive growth of hair.

The singular case of John Allen may be referred to the class of *hermaphrodites*.

Under the head of Hermaphroditism, or Hermaphrodism, may be included: 1st. Some varieties of malformation in which the genital organs and general sexual configuration of one sex approach, from imperfect or abnormal development, those of the other.

2d. Other varieties of malformation in which there actually coexist, in the body of the same individual, more or fewer of the genital organs and distinctive sexual characters, both of the male and female.

Hermaphroditism may be regarded as due to a failure of purpose, or to an uncertainty in the *nisus formativus* at an early stage of development. There is a period of time, following about the eighth week, up to which the embryo may develop either the reproductive organs of the male, or the reproductive organs of the female; in the the vast majority of cases the future development and growth are carried out on one line or the other, but in a small number there is an ambiguous development, leading to various degrees of hermaphroditism, or doubtful sex. The primary indecision, so to speak, affects only the ovary or testes respectively, or rather the common germinal ridge, out of which either may develop; the uncertainty in the embryonic ridge sometimes leads actually to the formation of a pair of ovaries and a pair of small testes, or to an ovary on one side and a testes on the other; but even where there is no such double sex in the essential organs, as in the majority of hermaphrodites, there is a great deal of doubling and ambiguity entailed in the secondary or external organs and parts of generation. Those parts which are rudimentary or obsolete in the female, but highly developed in the male, tend in the hermaphrodite to be developed equally, and all of them in an imperfect manner. In some cases the internal organs of one sex go with the external organs of the opposite sex.

It is possible that in the case of John Allen the ovaries and uterus were developed partially, whilst the only representative of the male organs is the diminutive but well formed penis; hence the strange mingling of the male and female natures, the latter predominating in strength.

156 Washington St., 4th Dist., New Orleans, La., 1888.

THE TREATMENT OF SACRO-ILIAC TUBERCULOSIS.

Read in the Section on Surgery at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY WELLER VAN HOOK, A.B., M.D.,
OF CHICAGO, ILLINOIS.

Time will not permit a discussion of the history, pathological anatomy, semeiology and diagnosis of tubercular disease of the sacro-iliac joint. The history of the study of the disease is intimately associated with that of "tumor albus" elsewhere, and affords a subject of corresponding interest. The semeiology and diagnosis are of importance not only on account of the fact that the disease has peculiarities of its own, but also because there are points of similarity between the signs of sacro-iliac disease and those of sciatica, Pott's disease, and especially of morbus coxarius, that may render its diagnosis exceedingly difficult, and perhaps in some cases impossible. The subject of the treatment of the disease, however, will be presented to you, as being perhaps of more general interest.

The clinical characteristics of tuberculosis at the sacro-iliac joint partake of all the general characteristics of tuberculosis of other joints. The sense of deep bogginess over the joint indicating chronic inflammatory involvement of the deep structures, and œdema of the soft parts above are present here as well as in morbus coxarius. The loss of function, the pain on pressing the bones together, the tenderness over the joint cavity, the change in attitude, the tumefaction, and finally the sense of fluctuation yielded by fluid exudates are common here as in tuberculosis of the knee or ankle. In older cases in which cold abscesses have formed and have opened outward, we find fistulæ, running in a great variety of directions from the starting point in the joint itself.

But from the symptoms of the disease we must endeavor not only to determine its pathological nature and its seat, but also its clinical tendency. For upon this will depend not only our prognosis, but also our treatment. We cannot here pause to discuss the movements effecting this tendency. Suffice it to say that they are comprised under the heads of the resisting power of the tissues and the invading power of the microbes. The anatomical evidence of supremacy is, in the case of the tissues, cicatrix formation; in the predominence of microbic power, local extension of tubercular granulations, and often the formation of cold abscesses. But, while we have learned from Koenig and others that osteal granulation-mass foci have a general tendency to peripheral extension; that wedge-formed sequestrum foci chiefly tend to spread tuberculosis toward the base of the wedge; and that some cases of synovial tuberculosis tend to dry granulation, others to abscess formation, we must confess with regret that we cannot clinically diagnosticate all of these pathological conditions, and hence cannot from these data determine the tendency of the disease. We are compelled, therefore, to limit our deductions, after locating the disease, to a determination of its tendency from a single symptom, viz., the presence or absence of cold abscesses; for if time permitted, it would be easy to show that the other symptoms are of little prognostic value.

Of thirty-eight cases of sacro-iliac tuberculosis with abscess formation that I have collected, only three have recovered without some sort of operative interference.

On the other hand, with the observance of hygienic laws, together with the application of complete mechanical rest, sixteen out of a total of seventeen collected cases without abscesses went on to complete recovery, the only death being due to an older suppurating tuberculosis at the hip-joint. If, therefore, under similar conditions, 92.1 per cent. of the cases with abscesses die, while 94.1 per cent. of the cases without abscesses recover, we are entirely justified in concluding that the abscess cases have a very strong tendency to a lethal termination, while the cases in which abscesses do not develop tend still more strongly to recovery.

But though the cases without abscesses tend to recovery, we have numerous examples to prove that cases originally devoid of abscesses can proceed, chiefly under imperfect treatment, to local extension, abscess formation, and eventually to death.

Again, the moist form without mixed infection —even where abscesses are present,—may end in recovery, as doubtless occurred in Hilton's case already cited, by resorption of fluid matter and encapsulation of the focal detritus. Instead of the fluid deing resorbed it may be discharged externally, the original focus being enclosed as before in a scar.

Death occurs in the moist form from sapræmia or from septicæmia, due to mixed infection; from simultaneous or intercurrent local tuberculosis elsewhere, as in the intestines, peritoneum, and lungs; or from general miliary tuberculosis brought about by tubercular infection of the blood itself.

Previous to the period when radical operations came in vogue for the treatment of tubercular arthritis, the treatment of sacro-iliac tuberculosis was on a par with that of other joints. Erichsen, in his celebrated clinical lecture of 1859, describes the treatment as properly including, besides internal remedies, rest with counter-irritation during the period prior to abscess-formation and opening of abscesses by valvular incision when they are large and chronic. He distinctly stated that operative interference was out of the question. In 1853, however, six years earlier, Prof. L. A. Sayre, of New York, had operated on a

case in a child by opening the joint posteriorly and gouging out carious bone. The child recovered and grew to manhood. This case has not been published in detail, and was communicated to me by Prof. Sayre. So far as I can ascertain, it is the first case in which évidement was practiced.

The advice of Erichsen, however, was followed out almost universally; for the formation of cold abscesses was regarded as a symptom of most desperate import. This was not unnatural, inasmuch as radical operative interference was positively forbidden, and the eventual occurrence of mixed infection seemed inevitable, with its long train of septicæmic symptoms, finally ending in death. So great was the dread of mixed infection that, in the absence of occlusive antiseptic dressings, only valvular incisions were made to allow the tubercular matter to escape. Such incisions were generally sealed up with collodion.

It is only in the last five years that operators have begun to consider seriously the question of radical treatment of the disease, operations having been performed by Tiling, of St. Petersburg, in 1883, and two last year by Gant, of England.

Those statistics already referred to when speaking of the tendency of sacro-iliac disease, are of vast importance in determining the nature of our treatment. For if 94.1 per cent. of the cases without abscesses recover, we learn two important facts, namely: that the treatment under which these recoveries took place is well nigh perfect as regards mortality, and that it behooves us to endeavor, by all the means in our power, to prevent the supervention of abscess-formation, after which there are only 7.9 per cent. of recoveries without operation. The cases that give a favorable result were all treated by rest very carefully carried out. The sacro-iliac joint cannot rest when the weight of the body is imposed upon the ischial tuberosities, or upon the heads of the femora. Hence to secure absolute immobility the patient must lie upon the back. This was Hilton's treatment. Prof. Sayre makes a thorough cauterization over the joint and uses extension. After a variable period, depending on the severity of the symptoms, he places his patients upon crutches, using a high heeled shoe on the sound side, and, to keep up extension, puts a heavy weight on the heel of the shoe used on the diseased limb. A diagnosis having been reached sufficiently early, these details of treatment certainly recommend themselves to us on account of the brilliant success with which Sayre has carried them out.

But when abscesses have formed, the treatment by rest alone has given such dismal results that we cannot wonder at the despair of Erichsen and many other writers, who regarded sacro-iliac disease as one of the most fatal in the nosological catalogue. Considering the number and variety of dangers awaiting the patient suffering from cold abscesses, we would be compelled to sanction even the most radical curative measures.

Sacro-iliac tuberculosis attended by abscess formation, I believe, admits of radical operation by no means grave in a very systematic manner, according to indications quite simple. The abscesses are compelled, by anatomical peculiarities, to pass either immediately into or out of the pelvis; that is, either anteriorly or posteriorly. This direction depends largely on the point at which the disease originated, whether at the anterior or posterior portion of the joint. Consequently, when we find originally intra-pelvic abscesses, we may justly assume that the anterior part of the joint is most likely affected; and when the abscess is extra-pelvic in origin, that the posterior portion is probably the seat of deepest involvement. Since we desire, especially in females, to do as little damage as possible to the healthy part of the joint, the problem is presented of reaching the disease, as far as may be, through comparatively unimportant soft structures. I propose two distinct procedures, according to these indications. The method of reaching the lesion when the abscess is *extra-pelvic*, is that practiced in the cases operated upon by Sayre, Tiling and Gant, namely, by simple incision over the joint, and évidement with the usual instruments. The operation may be performed systematically, as I have demonstrated repeatedly on the cadaver. A straight skin incision should be made from the lower border of the posterior superior spinous process of the ilium downward, that is, parallel to the spines of the sacrum, for a distance, in the adult, of about two and a half inches. If a sinus exist it should be enlarged with the sharp spoon, and if sufficient space is thus gained the operation may be completed without removing any bone except that which is diseased. If more space is needed it should be obtained by sub-periosteally removing, with a small chisel, a portion or all of the posterior inferior iliac spine, since access to the deeper part of the joint is more readily obtained by this process than by removal of part of the sacrum.

But when only *intra-pelvic* abscesses have formed, and we have reason to believe that the disease process lies chiefly in the anterior part of the joint, we must have recourse to the *second* procedure referred to, by which, if possible, the the posterior and sound part of the joint need not be disturbed. Now it must be remembered that the longitudinal axes of the auricular surfaces of the sacrum and ilium are directed antero-posteriorly, that is, almost perpendicularly to the flat surface of skin overlying the sacrum. Hence the broad expansion of the joint surfaces lies at a depth, in the adult, of two and a half to three inches from the surface. This surface may be reached as follows: The patient lying on the unaffected side with the thighs in exaggerated flexion, a longitudinal incision exposes the posterior *superior* spinous process of the ilium, from

which the periosteum and tendonous attachments of muscles are removed by dull instruments. With a pretty large chisel a piece of bone is now cut away from the iliac spine so as to allow the passage of the finger into the pelvis major, the inter-osseous ligaments having been divided by the knife. The anterior borders of the articulating surfaces are thus exposed to the touch of the surgeon, who, with the aid of a Volkmann's spoon with a long curved handle, can easily reach tubercular matter both in the bones and in the soft parts. Iodoform gauze acts as a sufficient drain.

This systematic operation was suggested by an operation done by myself, under the direction of Dr. Chr. Fenger, of Chicago. A man 32 years of age presented a "cold abscess" in the right iliac fossa, and another larger one between the crest of the ilium and the twelfth rib. For a number of reasons a diagnosis had not been made prior to the operation. The lumbar abscess having been freely opened and its walls scraped, a fistula was found by means of a probe leading downward and forward, in front of the posterior superior iliac spine into the pelvis, where denuded bone was felt. The chisel was used to remove a portion of the posterior superior spinous process of the ilium; the finger was then introduced into the larger pelvis, and the tubercular focus being located in the sacro-iliac joint, and exposed to the touch, no difficulty was experienced in removing it. The iliac abscess was drained and complete recovery ensued.

The points in treatment submitted to your further consideration are as follows:

1. *Where no abscesses have formed*, hygienic and general symptomatic treatment, with counter-irritation by means of the thermo-cautery where pain exists or improvement is slow, should be combined with complete mechanical rest, aided by extension.

2. *Where abscesses* or their resulting *fistulæ exist*, cases should be subjected at the earliest practicable moment to a thoroughly radical operation by évidement performed posteriorly, that is, directly, when the abscess is extra-pelvic in origin; performed, as it were, from the pelvic side, whenever the abscess originates within the pelvis.

CHOREA OF THE SOFT PALATE,

CAUSED BY THE HYPERTROPHY AND HYPERÆSTHESIA OF THE MUCOUS MEMBRANE COVERING BOTH INFERIOR TURBINATED BODIES.

Read before the American Rhinological Association, at Cincinnati, Ohio, Sept. 12, 1888.

BY J. E. SCHADLE, M.D.,

OF ST. PAUL, MINN.

That the origin of not a few reflex nervous disorders can with a certain degree of exactness be traced to the presence of morbid conditions of the naso-pharyngeal cavities, is a question no longer doubted. The observations of recent writers on rhinological subjects furnish us conclusive evidences that some forms of headache and of spasmodic asthma are in many instances the outgrowth of a nasal polypus, a turbinated thickening, or a septal deformity. The fact, too, is known that these reflex neurotic disturbances disappear soon after appropriate measures of treatment have been directed towards the removal of their cause.

The purpose of this paper is to call the attention of the Fellows of this Association to a case of choreiform movements of the soft palate appearing in a young lady whose family history is somewhat unusual, as well as remarkable, and whose affliction is without doubt phenomenal. The patient was referred to me by my friend, Dr. Baker, of this city, whose letter of introduction reads as follows:

"ST. PAUL, Minn., April, 16, 1888.

"*Dear Doctor:*—This interesting case came under my care June 3, 1887. The only thing complained of was a constant contraction and relaxation of the levatores palati. Each contraction carried the uvula upward and backward till it came in contact momentarily with the upper and back part of the pharynx. The relaxation and separation of the moist mucous membrane surfaces caused the sound. The noise was like that produced by a rapidly ticking watch, and of the same frequency. It was never absent except during sleep. The young lady was in excellent health, all the bodily functions being well performed. My treatment was as follows:

℞. Zinci bromidi . . . . . ℥j.
Syr. simplicis . . . . . ℥j.
♏ Sig. Ten drops in water four times a day, increase one drop each day until the dose nauseated.

"This not producing the desired result, I gave tr. physostigmatis in doses ranging from fifteen to thirty drops. After continuing this remedy for a time, I abandoned it and prescribed fl. ext. cimicifugæ rac., in doses of f℥ss to f℥j, every four hours.

"About July 7, 1887, I began the trial of galvanism, used eight cells of McIntosh battery and placed the positive pole with a sponge electrode at the back of the neck; the negative pole with a metal-tipped electrode such as is used for the urethra, was applied to the palate just above the uvula. The sittings were of five to ten minutes' duration, and I increased the number of cells to eleven. At the second treatment movements ceased and did not return for several hours.

"After the fifth or sixth application the ticking stopped and did not return till the first of this month when she called on me. Examination showed enlarged tonsils, with evidences of throat and nose disease. Thinking the condition of the nose and throat caused a return of the choreic movemens, and cure of same might permanently relieve, I now introduce her to you for examina-

tion and treatment. A singular feature of the case is that her general health had been almost perfect through all these years. Another item of note is that no other sets of muscles were involved. Yours, truly,

J. F. BAKER."

In the *Archives of Otology*, Vol. xii, No. 1, March, 1883, this same case is reported by Dr. Cornelius Williams, a distinguished oculist and aurist of this city. In this article Dr. Williams says: "When Violetta was ten years old, having occasion to get up in the night, she lost her way in going back to her bed, and reaching her grandmother's room by mistake she laid her hands upon the aged lady in the dark, and so alarmed her, and was herself so much frightened by the grandmother's shrieks, that she almost went into convulsions. She refused to return to her own bed, but lay in her sister's arms, starting and sobbing, the night through. Next day she was extremely pale and nervous, nor did she recover her wonted spirits for a number of days. This happened in the Spring of 1880, and a short time after this the child discovered that a strange clicking sound was produced in her mouth, but suffering no inconvenience from it she mentioned it to no one.

"In the June following she fell into Lake Elmo (Minn.), and came near being drowned, and a short time after this she called the attention of her mother to the clicking, which had now become constant. The family medical attendant was consulted, who pronounced it as a common affair. The uvula was cut off entirely, and one tonsil was amputated without result as far as concerned the clicking. The patient is in good general health; appetite and digestion good; sleeps well. She is easily fatigued, but is kept up by any excitement. There has been for the last three weeks diurnal incontinence of urine, the act of micturition recurring about every half hour, but at night it is hardly ever necessary for her to get up more than twice. Dr. D. W. Hand, who was kind enough to examine her, informs me that there is considerable leucorrhœa, and that the urethra is unusually large and patulous. He explored the bladder and found no evidence of stone. The act of micturition is not painful. Drs. Hand, Boardman, Abbott, and Wheaton, examined her heart at my request, and report that there is nothing abnormal about it. Upon looking into the patient's mouth it is perceived that the velum palati is rapidly raised and lowered without being made tense in its entirety. At the moment of relaxation of the levatores a sound is produced which is as much as can be like the ticking of a small brass clock, and in a still room it may be heard at a distance of twenty feet. The clicking corresponds to a complete contraction and relaxation of the levatores palati, and by actual count is 120 a minute, with very little variation in frequency at any time. When the mouth is opened widely the azygos uvulæ is sometimes seen to contract, but such contraction would seem to be physiological.

"The tone of the clicking is changed by closing the nose, and by otherwise altering the usual conditions of the mouth and nose as to the volume of air contained, but that, nor any other manipulation, procures the cessation of the noise or its cause. Laryngoscopic examination shows the larynx to be normal, save a slight congestion. Rhinoscopy is not practicable. Otoscopy reveals the membrana tympani of each ear slightly indrawn, the handle and short process of the malleus of the right being abnormally prominent. Light spot gone from both Mtt.

"By means of the 'diagnostic tube' I am able to hear the clicking sound in either of the patient's ears; more distinctly in the right. It may very well be likened to the ticking of a watch under a pillow, or the sound of the fœtal heart. If there is any movement of the membrana tympani, I have not been so fortunate as to observe it. The girl's voice is natural, and she can sing with correctness, uttering the chest notes without difficulty, but is unable to produce head notes at all. In running the scale, a decided tremolo is remarked. The patient, of necessity, breathes through the mouth, and from habit keeps it open during sleep. When there is tonsillitis, to which she is subject, there is considerable drooling. At such times she is apt to have glottic spasm. The spasm of the levatores ceases during sleep. At irregular intervals, perhaps fifty or a hundred times through the day, there is an interrupted spasm of the diaphragm, giving rise to a sudden and deep inspiration in two or three motions, as in sobbing, followed by prolonged expiration. At times, it may be for an hour or half a day, she hears in her ears a sound comparable to the rapid revolution of a small fan-wheel. Acuteness of hearing normal."

With the above information relating to the previous history, we are brought to the present consideration of this singular malady, a condition which I prefer to speak of as choreiform movements of the soft palate.

In company with her mother, Miss V. Z. presented herself at my office for examination on the 16th of April, 1888. She is a decided brunette, 17 years of age. General appearance is good; tall and well developed. Seems to be of a cheerful temperament.

Menstruation commenced normally, the epochs occurring regularly up to the present time. Digestive organs in a fair condition; suffers from constipation and flatulency quite frequently. Urinary function normal. Heart's action more or less excited; the heart beats tumultuously when ascending a flight of stairs, a hill or some other elevation. Complains in a marked degree of obstructed nose-breathing; dry sensation of the pharynx, disturbed sleep, and incessant mouth-

breathing. Organization is of the nervous type; excitement affecting nervous system is not well borne. Voice is impaired, especially when attempting to produce head tones, as in singing. The principal affection complained of, and for which she was referred to me, is the spasmodic movement of the velum palati.

Of the family history, particularly that part of it relating to the father's side, much can be said which not only has a special bearing on the case under consideration, but also gives valuable information for the neurologist. A predisposition to melancholia and suicide, handed down from the grandfather to the present generation, seems to exist. The grandfather, a Hungarian by birth, and a school-teacher by occupation, shot himself at the age of 58. An aunt, 55 years old, drowned herself in 1885. She was married, and was the mother of five children, one of whom, a son aged 28 years, came to his death two years ago by shooting himself. Another son, still living, suffered from melancholia for some time after the tragic deaths of mother and brother.

Conrad, father of Miss Z., at the age of 46, drowned himself while suffering from a fit of insanity. It is said he was an intelligent gentleman and an accomplished musician. In July this year, a brother aged 28 died from the effects of carbolic acid, which he drank with a view to self-destruction; this being his second attempt at suicide. The mother is healthy. Aside from an ancestral strumous tendency, her family history is good.

A faucial examination reveals distinct rhythmical choreiform movements of the velum palati accompanied by a peculiar clicking sound, distinctly audible for a distance of 12 or 15 feet from the patient. The levators of the palate seem to be the ones especially engaged in the production of these involuntary muscular phenomena. The levators act in unison with each other, and volition has no control over their behavior. The mucous membrane covering the palate and adjacent structures is anæmic, and has adhering to it a glistening tenacious secretion which, by ordinary attempts, is difficult to remove.

The left palatal tonsil is larger than it should be normally, a condition due to frequent attacks of acute tonsillitis to which she has been subject since childhood. Only a remnant of the uvula is to be seen.

By an anterior rhinoscopic examination I find chronic hypertrophy of the inferior turbinated bones, and in a more marked degree, of the middle ones, the presence of whose redundant tissue exerts pressure on the septum and produces obstruction. Posterior examination with the rhinoscope brings into view unusual chronic enlargement of the pharyngeal tonsil. It is lobular and irregular in shape, and extends with its free extremity from a broad base in the vault to some distance below the upper margins of the choanæ of the nose. Inspection of the posterior nares presents excessive chronic thickening of the pituitary membrane covering the posterior third of the inferior turbinated bones. That part of the nasal passages is almost occluded by this condition. The aspect of the septum posteriorly is thin and pale.

There is an important feature entering into the history of this case which must not be overlooked. I refer to the extremely hyperæsthetic state of the intra-nasal mucous membrane. Mackenzie's sensitive areas are prominently characterized by it. Even the margins of the nostrils sympathize in this respect with the mucous membrane lying beyond them. The presence of a speculum causes a disagreeable feeling and creates nervous irritation. The use of the probe in the chambers of the nose is utterly intolerable; contact of it with any portion of the membrane, and, more particularly with the posterior part of the inferior turbinated bones, at once gives rise to violent sneezing and spasmodic coughing. A flow of tears invariably follows these manipulations.

Treatment.—My treatment was mainly surgical. The first impression entertained was, that possibly the enlarged pharyngeal tonsil might have been a source of the trouble, and that a thorough removal of it would do away with a foreign element constantly coming in contact with the opposing surface of the velum palati, and exciting thus into action clonic spasms. Snaring was impracticable.

I therefore, by the use of Cohen's post-nasal cutting forceps, and of the electro-cautery, reduced the growth in its entirety. This procedure was ensued by cessation of the choreiform movements which remained absent for a period of two weeks, when they suddenly returned during a spell of nervous excitement from which the young lady was suffering.

My attention was now turned to the treatment of the nasal passages. The pathological changes found in them offered a theory for a reflex cause of the affection. Cocainizing the intra-nasal mucous membrane generally produced relief for half an hour. With a view to reduce the hyperæsthesia and hypertrophy of the turbinated bodies, I employed the electro-cautery, thoroughly burning the affected parts. An immediate result took place; the trouble at once ceased. Two cauterizations were necessary to effect entire perviousness of the nostrils and overcome obstructed respiration of the nose. Nose-breathing displaced mouth-breathing, and the dry sensation and sticky secretions of the pharynx gradually disappeared. The patient soon showed improvement in other respects.

The functional derangement of the heart and shortness of breath passed off, while the general

nervous system also gained tone. She also can now speak and sing with a clearer voice, the head tones improving daily.

Beyond a doubt a cure has been produced, the permanency of which already having been severly tested.

The melancholly death of her brother by suicide, mentioned in the family history, having occurred in the meantime, in itself was sufficient to reproduce the disturbance in consequence of intense emotional excitement into which she was thrown at the time. Upon receiving the news she was immediately seized by a violent attack of hysterical laughing which continued uninterruptedly for at least an hour. From this condition she passed for a few minutes into general muscular twitching. The velum palati, however, remained then as well as until now perfectly quiescent.

Etiology.—The choreiform movements of the soft palate as they were seen in this case, doubtlessly had for their origin a reflex cause, situated in a neoplastic and hyperæsthetic condition of the intra-nasal mucous membrane. In view of the fact that another exciting element has been mentioned as figuring in the etiology of the affection, the nasal disease may be termed the remote exciting cause.

Reference to a quotation from Dr. Williams informs us that the peculiar disorder of the velum palati became apparent soon after the patient, when still a child, had experienced on two consecutive occasions severe fright. This he maintains developed by its immediate exciting influence, the movements, which occurrence, it is my belief, simply brought into conspicuous activity what the reflex cause years before already had established.

The family history unmistakably illustrates a neurotic diathesis which evidently forms the predisposing cause.

Dr. C. E. Riggs, of this city, Professor of Nervous and Mental Diseases in the Medical Department of the University of Minnesota, who at one time saw the patient, personally related to me the following opinion when speaking of the nervous origin of the trouble:

"The antecedents and personal history of Miss Z., as related to me, clearly indicate the unstable and illy balanced condition which characterizes the nervous diathesis.

"Following the teaching of Pierret, we may regard all the intracranial nerves as analogous to a spinal nerve; the posterior root of this hypothetical nerve being the sensory portion of the fifth, its anterior root all the intracranial motor nerves, including the motor portion of the fifth. This hypothesis readily explains the clonic spasm of the levator muscles.

"Catarrhal states of the mucous membrane, more especially of the nasal and pharyngeal passages, may have their origin in a poorly nourished nervous system.

"The facial nerve gives off in the aqueductus fallopii three branches, two of which, the great and small superficial petrosal nerves, furnish motor influence to the levator palati, the azygos uvulæ, the tensor palati and tensor tympani muscles; through Meckel's ganglion the great superficial petrosal nerve is distributed to the levatores palati.

"The diseased surfaces under consideration derive their sensation from the fifth. The catarrhal condition of these mucous surfaces may be considered both as a cause and an effect, but the prime factor in the evolution of this peculiar clonic spasm I believe to be the intense nerve sensitiveness of the patient, since, without it, there would have been no reflex excitation, but a purely local condition.

"The excessive hyperæsthesia of the diseased tract clearly shows great irritation of the terminal sensory filaments of the fifth nerve.

"Accepting Pierret's hypothesis that the cranial nerves, as a whole, comport themselves like a spinal nerve, the reflex nature of the spasm is readily describable."

That this is a rare case is quite evident; whether another just like it has as yet been reported is doubtful.

The cases reported by Sajous (*Universal Annual*), and by Burnett (*Trans. of the American Otological Society*, vol. iii, part 3), were, it appears, particularly associated with disease of the Eustachian tubes or ears, and the crackling noises characterizing them the authors ascribe to aural complications.

Mackenzie, in Wood's "Reference Handbook," when speaking of the subject, says: "Clonic spasms of the soft palate, with objective noises in the ear, dependent upon neuralgia of the trigeminus, have been observed by Scheck."

A series of interrogations always gave negative results in the case I have here reported; no information could be obtained which led to the belief that Eustachian or aural diseases had at any time existed.

Then, as to the clicking sound; what produced it? It was seen distinctly that the levator muscles of the palate were the only ones engaged in the spasmodic actions; therefore, by repeatedly watching these phenomenal movements, the conclusion seems reasonable that the click resulted from the combined effect of muscular rigidity and sudden disengagement of the velum palati from the pharyngeal vault.

104 East Third St.

A SOCIETY of German Dermatologists is to be formed. Circulars have been sent out by Professors Neisser and Pick, and a committee has been formed for carrying out the plan.

MEDICAL PROGRESS.

ANALYSIS OF 500 CASES OF ACUTE RHEUMATISM.—DR. H. WALTER SYERS thus analyzes 500 consecutive cases of acute rheumatism:

Every case of acute rheumatism admitted to the Westminster Hospital during the last seven years has been carefully investigated with especial reference to the inheritance of rheumatism, nervous disease, and of phthisis. Attention has also been given to the subject of heart lesion. The analysis given below is based upon an examination of 500 consecutive cases, the history having been obtained for the first four years by Mr. Hebbert, medical registrar during that period, and continued by myself.

Sex.—There were 235 males and 265 females.

Age.—Under 5 years, 1; from 5 to 10, 26; 10 to 20, 188; 20 to 30, 154; 30 to 40, 90; 40 to 50, 29; 50 to 60, 10; over 60, 2.

Inheritance.—(*a*) There was a history of *rheumatism* in near relatives of the patient (father, mother, brother, sister, uncle, aunt) in 193 cases, or in 38.6 per cent. of the whole number admitted. A history of acute rheumatism in members of the family similarly related to the patient was found in 107 cases, or in 21.54 per cent. of the whole number. A history of acute rheumatism occurring in either parent was found in 46 cases, or in 9.2 per cent of the whole. I have further ascertained the number of cases with acute rheumatism inheritance occurring at each period, and have compared these numbers with the numbers representing the cases occurring at the corresponding periods. The result is as follows:

Age.	Total.	Acute Rheumatism Inheritance.
Under 5	1	1
5 to 10	26	7=1 in 3.7
10 to 20	188	62=1 in 3.03
20 to 30	154	24=1 in 6.4
30 to 40	90	9=1 in 10
40 to 50	29	3=1 in 9.6
50 to 60	10	1=1 in 10
Over 60	2	0

(*b*) *Gout.*—A family history of gout was obtained in only 38 cases, 7.6 per cent. of the whole number.

(*c*) *Neurosis.*—Of nervous disease in the family history I found 80 cases or 16 per cent. Of these 80 cases, a family history of insanity was obtained in 39 cases, and a history of epilepsy in 22 cases.

(*d*) *Phthisis.*—In 83 cases (16.6 per cent of the whole number) there was a family history of phthisis found. Thus the percentage of cases owing a phthisical family history is a fraction greater than that representing a neurotic inheritance.

Heart.—The cases complicated with heart affection were 267, or 53.4 per cent of the whole. Of these, there were 48 cases (17.9 per cent.) of pericarditis, 83 (31 per cent.) of endocarditis, and 136 cases (50.9 per cent.) of combined endocarditis and pericarditis. In 160 cases it was possible to ascertain the age at which the heart affection occurred, and the result is as follows: Under 5 years of age, 0; 5 to 10, 14; 10 to 20, 87; 20 to 30, 37; 30 to 40, 16; 40 to 50, 4; 50 to 60, 2; over 60, 0. The percentages of the numbers admitted with heart affection (for the first time) at the corresponding ages being as follows: Under 5 years of age, 0; 5 to 10, 51.85; 10 to 20, 46.52; 20 to 30, 24.02; 30 to 40, 17.7; 40 to 50, 13.8; 50 to 60, 20; over 60, 0.

Only in 19 cases was the occurrence of *chorea* noted in the history of the patient, either before admission, during the attack of acute rheumatism, or during convalescence. Of these 19 cases, 12 were females and 7 males. In 7 cases the chorea was followed by acute rheumatism; in 4 cases the attack of chorea occurred during convalescence; in the remaining 8 cases the chorea and the rheumatism were separated by an interval varying from several months to several years.

Season.—From January to March, 146 cases were admitted, or 29.2 per cent.; from April to June, 92 cases, or 18.4 per cent.; from July to September, 120 cases, or 24 per cent.; and from October to December, 142 cases, or 28.4 per cent.

From April to September, 205 cases, or 41 per cent., were admitted; from October to March, 295, or 59 per cent. In January were admitted 54 cases; in February, 48; March, 44; April, 32; May, 28; June, 32; July, 28; August, 45; September, 47; October, 56; November, 34; December, 52; total, 500.

Mortality.—The total number of deaths was 15, or 3 per cent. Of males 9 died, and 6 females. There were 2 deaths with hyperpyrexia, the temperatures attained being respectively 108.8° and 107.2°; 1 death resulted from ulcerative endocarditis, 5 from pericarditis and endocarditis, 1 from pericarditis and pneumonia, 1 from pneumonia, 2 from collapse, and 3 from old-standing morbus cordis.—*Lancet*, June 30, 1888.

TREATMENT OF UNUNITED FRACTURE OF THE NECK OF THE FEMUR.—In the *Riforma Medica*, of August 14, a case is related, in which PROF. LORETA successfully treated an ununited intracapsular fracture of the neck of the femur, by scraping the fractured surfaces and inserting a bundle of metallic sutures between them. On January 23, a robust man, æt. 36, was admitted into the Bologna clinic with the history of a fall on the left hip, nineteen months previously, since which he had been quite unable to stand, and had suffered from constant severe pain, shooting from the left hip-joint into the gluteal region, the point of greatest intensity being over the course of the

sciatic nerve. The limb was much wasted, but it was normal in position, and scarcely at all shortened. Flexion and extension of the thigh on the pelvis were almost impossible, but the patient could occasionally execute very slight movements of rotation and abduction. In rotation, he was sometimes conscious of faint crepitus in the trochanteric region. Feb. 15, Prof. Loreta operated with full antiseptic precautions. He made a long incision behind the great trochanter to expose the capsule of the joint, when he noticed a depression between the intra-capsular and extra-capsular portions of the neck of the femur. On moving the limb, it was found that there was a fracture without displacement in this situation. The capsule was then opened, the fibrous tissue between the fragments divided, and the fractured ends carefully freshened by scraping with a raspatory. As it would have been very difficult to wire the fragments, a bundle of from eight to twelve metallic sutures was introduced between them, and brought out at the lower angle of the external wound. The wound was carefully cleansed, a drainage-tube inserted, the edges brought together with deep and superficial interrupted sutures, and the whole covered with a sublimate dressing. A long outside splint was then applied. Five days after the operation, the bundle of metallic sutures was removed, and the wound healed by first intention. In less than a month the pain had permanently ceased, and fifty-five days after the operation the patient left the hospital, being able, not only to stand, but to walk with no further support than an attendant's hand.—*British Medical Journal*, Aug. 25, 1888.

THE USE OF SALOL IN THE DISEASES OF CHILDHOOD.—DEMME has used salol in four cases of acute articular rheumatism, in two of acute endo- and pericarditis accompanied with articular fluxion to a moderate degree, and in two of catarrh of the bladder; also a topical application in two cases of burns. In the first two patients with the acute rheumatic polyarthritis, two boys of 8 and 13 years of age, the salol was given as long as the febrile symptoms persisted, as well as the swelling and redness of the joints, in doses of 3 or 4 grams daily. This dosage was continued with the first for five and the second for seven days, the dose being reduced to 2 grams and then to 1 gram during convalescence. In the third case, a girl of 7 years, in which all the articulations were swollen, and the fever was considerable, 20-grain doses of salol were given, and in forty-eight hours the intensity of the process had greatly diminished. The fourth patient was a girl 9 years of age, who vomited the first dose of salol which was given. An enema, containing 2 grams of salol, was then given, but in eight or ten hours an urticaria appeared which involved the entire surface of the body. The salol was suspended, and two days later a dose of salicylate of soda produced an eruption similar to that produced by the salol.

Antipyrin was then given in gram doses, and in five days the rheumatism disappeared. In the two cases of endo- and pericarditis salol produced a favorable effect only when the cardiac action and intravascular pressure had been regulated by digitalis. The first of the two cases of catarrh of the bladder was caused by cantharides in a boy 5 years of age. The salol was given in doses of 1 gram, and this was gradually increased to 2½ grams; after two days the urine became acid, more abundant, and caused less pain in its passage. The case was cured in fifteen days. The second case was chronic cystitis following measles, and was equally well treated with salol. In the two cases of extensive burns the salol was mixed with an equal quantity of talc powder and dusted upon the wounds, which quickly cicatrized. —*Archives of Pediatrics*, September, 1888.

TREATMENT OF DIPHTHERIA.—COUSOT discusses anew the question whether diphtheria is primarily a general disease with local manifestations, or whether the diphtheritic membrane is the first factor in a general intoxication. The author believes that the great point is to combat the local manifestations from the beginning, and that they constitute the origin of all subsequent accidents. He believes that the following principles should dominate all rational treatment of this disease:

1. The medical treatment of diphtheria should be principally local at the beginning of the disease. 2. The organized germs of the products of diphtheria should be destroyed or sterilized wherever they occur. 3. Putrefaction of the elements of the diphtheritic membrane should be prevented at all hazards. 4. If the disease has reached an advanced period and general poisoning has supervened, local treatment should still be rigorously continued, in addition to the adoption of suitable means for controlling the general symptoms. The best means for the treatment of diphtheritic products with which the author is acquainted is a preparation of tannin, alcohol and mucilage applied with a syringe. Tannin is a safe antiseptic which may be extensively used without fear of injury to delicate tissues. The mixture which the author uses contains:

Mucilage	100 parts.
Tannin	10 "
Alcohol	2 to 20 "

If the false membrane is discovered when there is only a single patch upon the skin or the mucous membrane external to the air-passages, applications of the tannin may prevent its spread. If the pharynx, tonsils, or nasal fossæ are involved, the mixture should be injected by the mouth or nose every two hours. Evidences of putrefaction

will disappear after the first few injections, the membranes will shrivel, and the underlying mucous surface will assume a healthy red appearance. —*New York Medical Journal*, Sept. 15, 1888.

TREATMENT OF RUPTURE OF THE BLADDER.—In an original memoir contributed to the July number of the *Archives Générales de Médecine*, DR. A. BLUM has reported a case under his own care of intraperitoneal rupture of the bladder with peritonitis successfully treated, after an interval of forty hours, by laparotomy and suture of the wound. Of twelve recent cases—eleven collected from English and German sources—in which laparotomy was performed for intraperitoneal rupture, six ended in recovery and six in death. In the table of collected cases published by Bartels in 1878, ninety-three out of ninety-four cases were fatal. The following conclusions are given by Dr. Blum at the end of his paper: "The surgeon, in dealing with a case of certain or supposed rupture of the bladder, ought not to hesitate to incise the linea alba as soon as possible, in order that he may make out precisely the seat and extent of the lesion. If the laceration is seated near the base of the bladder—that is to say, if the peritoneum be not involved, perineal cystotomy will be indicated. In cases of intraperitoneal rupture the edges of the wound in the bladder should be brought together by sutures, and the 'toilette' of the peritoneum be performed without subsequent drainage. The best kind of suture, and the only one that has been successful in man, is that of Lembert (sero-muscular suture, not including the mucous membrane). When, in consequence of its situation and extent, the wound cannot be united, it should be sutured, if possible, to the abdominal wound, or drainage should be effected, according to the practice of Socin, by an artificial perineal wound. The existence of peritonitis at the time of operation is not a contraindication to stitching of the wound in the bladder. Still, the earlier the performance of laparotomy the better are the chances of success.—*London Medical Recorder*, August 20, 1888.

THE RESECTION OF GREAT VENOUS TRUNKS IN THE EXTIRPATION OF MALIGNANT TUMORS.—MADELUNG has been trying the effect of resecting the great venous trunks near malignant tumors when the cancerous disease did not appear to have become generalized, on the ground that the veins with the lymphatics form the road by which cancer extends. Schevan, in his inaugural thesis (*Ctrlbl. f. Chir.*) reports fifteen cases. In eleven the jugular was resected, once on both sides. Twice there was resection of the common carotid and of the jugular at the same time, eight times for glandular metastatic carcinoma, and three times for lympho-sarcoma. In four other cases the femoral vein was resected, once with resection of the artery, twice for cancerous glands following primary disease of the genitals, once for a tumor of the vagina, and once for primary cancer of the glands. Three patients died as a result of the operation; one of gangrene of the lower extremity and septicæmia following resection of the femoral vein, another as a result of resection of the common carotid and jugular, a third without the cause of death being positively established. Three died of local return, two of exhaustion, and two more of the primary disease, which could not be removed. Two were still alive, though suffering from a fatal return of the disease, and one was cured, though the observation dated only one month after the operation. Two patients were considered as cured; in one, death followed two years after the operation without any return, and the other had lived three years without a return.—*New York Medical Journal*, Oct. 6, 1888.

RESECTION IN ARTHRITIS DEFORMANS.—ZESAS, of Bern, in a paper on this subject, discusses the results of resection in cases of arthritis deformans with regard to the relief of pain, freedom from relapse, and the functional capacity of the limb. There seems to be good reason for asserting that the pains which cause so much distress in coitis deformans will be removed after resection, and reference is made by Zesas to permanent and complete relief of pain after resection of the elbow-joint for arthritis deformans. The results of the resection of the hip performed by Dr. Niehaus two years and a half ago, and those of like operation on other joints affected with arthritis deformans, show that there is no tendency to a recurrence of this disease after such treatment. With regard to the functional results of the operation, on the other hand, the prognosis is very unsatisfactory, since in three of the cases of resection of the hip in which reports have been given of the subsequent condition of the patients, the limb was too weak to sustain the weight of the body, and locomotion could not be effected without the use of crutches or some other means of support. It remains for subsequent and more abundant experience to determine whether such unfavorable results be due to the advanced age of the subjects of coxitis deformans or to the nature of the affection itself, which may possibly prevent the development of a serviceable joint.—*Deutsche Zeitschrift für Chirurgie*, Bd. 27, Hft. 5 and 6.

A SUBSTITUTE FOR COD-LIVER OIL.—LAMANDE recommends the following as a substitute for cod-liver oil:

Glycerine	℥x.
Tincture of iodine	ʒss.
Iodide of potash	grs. xij.

M

S. One teaspoonful fifteen minutes before meals.

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SATURDAY, OCTOBER 20, 1888.

THE BRADSHAWE LECTURE ON URÆMIA.

The Bradshawe Lecture before the Royal College of Physicians this year, by DR. WILLIAM CARTER, was on a subject of great interest, which was ably handled by the lecturer. Beginning with the definition, "Uræmia may be defined as the altered condition of health caused by the accumulation within the body of poisonous products that should be eliminated by the kidneys," the lecturer points out that the symptoms of this altered condition are so various in themselves, and so variously combined, that within the limits of this general definition what on the surface appear to be altogether different diseases are formed; and it is not surprising that many explanations have been offered of such varying phenomena.

After a careful review of Traube's theory of uræmia, that the nervous symptoms are due to cerebral anæmia, and never occur without preceding cardiac hypertrophy and blood-dilution; that heightened blood-pressure causes cerebral anæmia, and as this affects one or another portion of the brain, there will be a preponderance of either coma or convulsions, the last being limited if the anæmia is limited, general if it is general, Dr. Carter is not inclined to support this theory. Much good work in renal pathology has been done by the French School of late years, and this is specially considered and discussed by Dr. Carter. The modification of Traube's theory adopted by Jaccoud and by some eminent English clinicians seems far from unreasonable to him. It will be remembered that Traube's theory was called forth chiefly by the fact that the brain is pale and watery in some cases of death from uræmia. This, however, is not a constant pathological condition. Nevertheless, this condition should be regarded as of considerable importance, and may not, after all, be so antagonistic to the views of the chemical pathologists as they think. "We have," says Dr. Carter, "no absolutely certain *post-mortem* signs that enable us to say that either local dilatations or local spasms of cerebral vessels have occurred during life in any case of Bright's disease; but as, at any rate vascular spasm certainly occurs in other and sometimes strangely limited parts, where the death-like pallor which it produces can be plainly seen, it is at least not improbable that it may also occur in some of the vessels of the brain, where, from the nature of the case it cannot be seen."

But we must pass from this interesting aspect of the subject to the experimental methods of investigating uræmia. And we may begin by stating a cardinal point made by Dr. Carter, that uræmia is a toxæmia, and that whatever increases the flow of blood to the nerve-centres in a case of renal disease adds to the probability and danger of toxic manifestations. It is agreed that there is a poison producing the uræmia; but what it is we do not know. We may be said to know, however, that it is not urea, not carbonate of ammonium, nor any one substance. We know that normal urine is toxic, that it contains alkaloidal and other poisons; if these be not properly eliminated the system must suffer from their poisonous effects. The experimental investigation of uræmia, while showing that the difficulties to be overcome are many and great before the pathogenesis of uræmic poisoning can be understood, show at the same time what some of the difficulties are, and give great encouragement. And while great caution is required in interpreting clinical facts by the results of experiments on the lower animals, yet the experimental investigations that have been made are gradually opening up new methods of practice, and at the same time show what was good in the older methods by giving reasons for their being good.

In his recent work on "Auto-Intoxication in Disease" Bouchard's conclusions in regard to

uræmia may be thus summarized: The urine as a whole is poisonous. The sources of its toxicity are fourfold—namely: 1. Aliments, especially their potassium compounds. 2. The absorbed products of intestinal putrefactions. 3. Secretions, such as the bile, saliva, etc. 4. Tissue disintegrations. These circulate in the blood, and, unless removed, poison the tissues. Bouchard showed experimentally that the nature of the toxicity of the urine varies according to many circumstances, and he has determined the presence of seven distinct toxic substances combined in the most variable proportions under different circumstances. Two of these substances were convulsivant, one diuretic, one narcotic, one sialagogue, one pupil-contracting, and one temperature-reducing. We know, too, from recent investigations, that the urinary poisons have different effects according to the times and circumstances of their formation, at one time stimulating, at another inhibiting the same cortical cells of the brain, thus at one time causing paralysis and at another time convulsions in the animals into whose blood they are injected.

What then, in the way of treatment, have the experimental studies of uræmia taught us? Not only have these studies taught us newer and better methods of treatment, but they have pointed out earlier symptoms, the importance of the recognition of which cannot be overestimated. Dr. Carter shows that the principles on which practice must be based consist mainly (1) in cutting off one or another of the urinary poisons at their source, now that we know to some extent what these poisons consist of, and whence they are derived. Under this head we recognize the great importance (*a*) of limiting potassium salts both in food and in medicine, (*b*) of employing the simplest and most easily assimilated diet, such as milk, (*c*) of bowel disinfection, (*d*) of maintaining at its best the functional activity of the liver, (*e*) of care in the nature of nutrient enemata when these are required. (2) In directly and indirectly withdrawing or diluting the uræmic poison, by (*a*) venesection, (*b*) purging, (*c*) sweating, (*d*) transfusion. (3) By burning up the poison, by (*a*) active exercise, (*b*) the administration of oxygen or oxidizers. (4) In antagonizing the poison, or at least overcoming special symptoms. Practically, then, the sodium salts should be substituted for the potassium salts, the latter being forty times as toxic as the former. The value of the milk diet has long been known, and the reason for its value is apparent. If it cannot be digested, then to the diet of foods that leave more residuum than milk must be added certain intestinal disinfectants, little soluble and non-poisonous, such as naphthalin, iodoform, and animal charcoal. As to the value of blood-letting in convulsions or coma, Dr. Carter thinks that if the pulse is hard and quick, a moderate bleeding will do no harm, even if the patient should be anæmic, and if he is not anæmic it will be likely to do good. Adding to the amount of blood, says Dr. Carter, will equally dilute the poison. Dieulafoy has cleared up the uræmic symptoms and secured great improvement by transfusing 120 grams of blood, and Dr. Carter has transfused freshly drawn goat's milk; or the solution of the chloride, phosphate and carbonate of sodium may be injected. The value of purgation and diaphoresis are so well known that they need not be insisted upon. Jaccoud's treatment of Bright's disease by inhalations of oxygen seems to promise good results. For the relief of uræmic asthma, it is probable that most good will be obtained from the agents that relax vascular spasm, such as ozonic ether.

Dr. Carter's admirable lecture may be found in the *Lancet* of August 25, and in the *British Medical Journal* of September 1. One finishes reading it with the feeling that, obscure as the subject is, he knows more of it than he did before.

DISINFECTION AND DISINFECTANTS.

The first report of the Committee on Disinfectants of the American Public Health Association has just been issued. If there were no other *raison d'être* of the American Public Health Association, this volume alone would be sufficient. The Committee on disinfectants, it will be remembered, was composed of Drs. George M. Sternberg, Joseph H. Raymond, Charles Smart, Victor C. Vaughan A. R. Leeds, W. H. Watkins, and George H. Rohé.

The present volume contains the reports for the two years previous to 1887, which have already been noticed, and the report for 1887, which may in a certain way be regarded as an additional report with a summary of what is contained in the others. The report of the Chairman, Dr. Sternberg, is very full, as was to be expected. It is a

report of what he himself has done in the way of confirming the conclusions arrived at from work in former years. He discusses fully the data relating to the several disinfecting agents mentioned in the former reports. Former conclusions have been tested by experiments upon pure cultures of the various pathogenic and non-pathogenic bacteria available for this purpose. Elaborate and careful experiments have been made in regard to the thermal death-point of microörganisms, and conclusions drawn.

As to the single disinfectants, further experiments show that the high place at first given to chlorinated lime is fully justified; but Dr. Sternberg recommends that *Standard Solution No. 1* be made by adding 6 ounces of chloride of lime to the gallon of water, instead of 4 ounces. The results of the experiments of Dr. Meade Bolton, made for Dr. Sternberg, are in accord with those of Van Ermengern, and show that for disinfection of highly albuminous material the amount of mercuric chloride required will exceed that in the standard solutions (1:1500), formerly recommended by the Committee for sterilizing excreta. Preference is given to the chloride of lime solution for the disinfection of excreta. In regard to carbolic acid, a consideration of experimental data leads Dr. Sternberg to believe that carbolic acid possesses a decided advantage over mercuric chloride or over oxidizing disinfectants for the disinfection of masses of material to be left *in situ*, such as human excreta in privy vaults. This advantage is due to the fact that it is not decomposed nor neutralized by putrefying material, and that it will exercise its antiseptic action throughout the mass, even though it may not destroy spores or pathogenic organisms present. In the first report of the Committee sulphate of copper is recommended in a solution of 2 to 5 per cent. for the destruction of infectious material "*not containing spores.*" Dr. Sternberg now says that this proportion may be reduced to 1 per cent., except in the presence of a considerable amount of albumen, when the amount must be increased. Pure calcium oxide is found to have no great value for disinfecting purposes, but as it has considerable germicide power when used in the form of lime wash, especially after prolonged contact, its general use for sanitary purposes is to be recommended wherever it can be applied to surfaces supposed to be infected by disease germs.

The most complete paper on Ptomaines that has appeared in the English language is the one contributed to this report by Dr. Victor C. Vaughan. Following this are two very valuable articles, "Methods of Practical Disinfection," by Dr. George H. Rohé, and "The Quarantine System of Louisiana—Methods of Disinfection Practiced," by Dr. Joseph Holt. These papers are well and profusely illustrated. The conclusions in regard to disinfection and disinfectants will be published, for the information of our readers, in another department.

This report may be obtained from Dr. Irving A. Watson, Concord, N. H.

AN UNSEEMLY QUARREL.

In plate V of Hogarth's "Harlot's Progress" is presented the spectacle of two disciples of Æsculapius, who the commentator has the grace to insinuate are not regular, in a hot quarrel over a dying unfortunate, whom each charges the other with having poisoned. The scene points the moral that the doom is the pathetic rounding up of an evil career. Not a single character in this delineation shines with a reflected glory—all is dark, dismal and shuddering. There is a most woful want of all the proprieties, even down to the venal nurse despoiling a dilapidated trunk of its few valuables.

Now why should a magnanimous potentate, full of good-will to men, have been overtaken by the more cruel fate of a death made uneasy by domestic bickerings and court intrigues? Why should a noble profession, full of all beneficence, be besmirched by the quarrels of men oversensitive about a transitory glory, which might have been transferred by the will of the monarch upon the bragging professor of a cancer specific? Why should the "infallible" expounders of an art, who came to a diagnosis by the easy reading of a a post-mortem backwards, have accentuated so-called snubs, while a desirable life was at stake?

"Not so happy—yet more happy," is the outcast Lazarus in a Home for Incurables who is allowed to die in peace behind a friendly screen, with no public peering in at the windows and awaiting the flight of a wailing soul.

Dr. Paul Gibier has been charged with a communication to study yellow fever in the United States, and particularly in Florida.

EDITORIAL NOTES.

ETHER IN HEART FAILURE.—PROFESSOR VON BAMBERGER has recently recorded, in the *Wiener klinische Wochenschrift*, an interesting case showing the effect of ether in cardiac insufficiency. The case was that of a man who came under treatment about two years ago, and who was suffering from cardiac insufficiency due to fatty degeneration (but no cardiac failure), and from considerable dropsy, albuminuria, hepatic enlargement, dyspnœa, and continual insomnia. The patient, a man æt. 60, was directed to try the Oertel "cure" in the mountains, but the dyspnœa and other symptoms became so aggravated before the "mountain cure" was begun, that the physician in attendance tried the effect of injections of ether. The effect of these injections was that the secretion of urine, which other drugs and means had failed to increase, rose to several thousand cc. daily, and continued so for some time; at the same time the dropsy and the dyspnœa decreased. The patient was now able to undergo the Oertel "cure," under which progress was made, but some months later he died of apoplexy. Bamberger thinks it probable that the good effect of the ether in this case was due to its action on the kidneys; though it may have acted as a direct stimulant to the enfeebled heart.

THE COLOSTRUM CORPUSCLE OF HUMAN MILK.—DR. EDGAR BECKIT TRUMAN, of Nottingham, has made some investigations to ascertain the significance of the colostrum corpuscle, and to ascertain the usual condition of the breast milk three months after confinement. Medico-legists usually mention the presence of colostrum in milk as characteristic of recent delivery. Dr. Truman, from a study of a number of cases, comes to the conclusion that the colostrum corpuscle is no proof of recent delivery, or of delivery, say, within the previous three months. It is a sign of incomplete development of the products of the mammary gland, and in this way we may get it with retroflexion of the uterus, prolapse of the ovary, incomplete action of the glands, chronic ovaritis, cancer of the breast, and dyspareunia with laceration, in all which cases we get the irritative action of disease, instead of the normal healthy activity of the reproductive organs. In fact, the presence of the corpuscle would tend to negative the supposition of a delivery followed by three months' suckling. The record of Dr. Truman's cases may be found in the *Lancet* of September 1, 1888.

THE PHYSICIAN—A NATURALIST.—IN THE JOURNAL of September 15, attention was called to the address before the recent annual meeting of the British Medical Association, on this subject, by Dr. Gairdner. In the *Edinburgh Medical Journal*, of September, is a graduation address on this subject by PROFESSOR SIR WILLIAM TURNER, delivered on August 1, just a week before Dr. Gairdner's address was delivered. Sir William's address is somewhat on the same lines as Dr. Gairdner's, and it is certainly a coincidence that the two should have been delivered at almost the same time. Sir William Turner calls attention to the value of complete and accurate observation, to the great value of the study of the sciences, and to the contemplation of Nature in disease, by which the physician becomes inspired with a desire to penetrate the mysteries of life and organization, and to remove the healing art from the domain of conjecture and hypothesis, and plant it on the firm ground of science.

INTUBATION TUBES; THE ALLEN SURGICAL PUMP.—We are pleased to observe the favorable notice our English brethren gave two Chicago devices exhibited at the recent meeting of the British Medical Association. They deserved the attention. Dr. Waxham's paper on "Intubation of the Larynx" was very favorably received, as all who know him would have prophesied. His modifications of the intubation tubes were exhibited, as well as the methods and results of intubation described.

Mr. Truax was invited to exhibit the Allen Surgical Pump by several members of the Association who saw it at the International Congress and who subsequently used it. We learn from the *British Medical Journal*, the *Lancet*, the *Asclepiad*, and other English journals that it excited much notice, as it deserved to do. It is so simple and its uses so manifold, and its cost so reasonable, that it deserves the popularity that it has acquired in this country and, as we hope, now in England.

THE PHONOGRAPH FOR RECORDING PULMONARY AND CARDIAC SOUNDS.—During his vacation the past summer, DR. WILLIAM PORTER,

of St. Louis, Mo., says he used some of his time in experimenting with the phonograph for permanently registering the fac simile of any abnormal sound produced in the lungs and the heart. (See *Weekly Medical Review*). He says: "Not only are different voice sounds presented distinctly, but by attaching the ordinary stethoscope some of the cardiac sounds could be easily recognized after they had been recorded by the instrument." The most perfect result he obtained was from a case of *mitral insufficiency*. The subject is worthy of much careful investigation.

Removal of Superfluous Hairs by Electrolysis.—This operation, which is not difficult, though requiring some practice, does not seem to be perfectly understood. A writer in the *British Medical Journal* says: An irido-platinum needle is commonly used, and is inserted along the sheath of the hair until it reaches the level of the root. It is most convenient in practice to use a strength that requires about 30 to 35 seconds to loosen the hair sufficiently so that it comes out without traction when taken hold of by the forceps. In dealing with hairs on the upper lip or on the chin of women, it is advisable to operate only on hairs that are strong and black. So long as the hairs are colorless, unless they are very thick and strong, they are better let alone.

Dr. Abner Hagar, of Marengo, Ill., died at his home September 22, 1888, aged 73 years, and 8 months. He was one of the early and highly respected practitioners of medicine in the northern part of Illinois. He graduated from the Medical College of Geneva, New York, in 1841, and in the same year commenced the practice of his profession, first in Dundee, Ill., then in HcHenry, and in 1843 moved to Marengo, where he continued to do a large practice until within a few years of his death.

Horse-flesh is said to be regularly exposed for sale in the butchers' shops in Liverpool, and the authorities do not interfere so long as the meat is sound in quality and is offered as horse-flesh. A case recently came up in Liverpool in which ill-smelling horse-flesh was offered for sale, and a witness said he killed one or two horses every week; certainly a surprising statement when one thinks how few horses that are unfit for work are suitable for food.

Dr. W. W. Ireland, the author of "The Blot upon the Brain," will shortly issue a gallery of eccentric or insane persons who have had much influence upon men. The list will include among others Swedenborg, Louis Riel, Guiteau, Theodore of Abyssinia, King Theebaw, and Malagrida.

Dr Wm. Osler, Professor of Clinical Medicine in the University of Pennsylvania, has been elected Professor of Medicine in the Johns Hopkins University and Physician to the Hospital, Baltimore, Md. A very excellent appointment.

The First Number of the *University Magazine*, has made its appearance, and is filled with interesting papers. It is published monthly, in the interest of the Medical Department of the University of Pennsylvania.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Stated Meeting, September 26, 1888.

The President, J. Solis Cohen, M.D., in the Chair.

Dr. Samuel W. Gross read the following paper on

THE TREATMENT OF CARCINOMA OF THE BREAST.

Of operations which do not rank with major procedures, not one is more commonly practiced by men not skilled in the manual of surgery than that of the removal of the mammary gland for carcinoma. The superficial situation of the organ, the ease with which hæmorrhage is controlled, the flaps are united, and the dressings applied, all tend to make partial or complete extirpation of the breast a tempting field for the young surgeon. If to these considerations be added the great frequency of the disease, it will be seen that its treatment should constitute an instructive topic for consideration and discussion by this body.

In accepting your invitation, Mr. President, to make the opening remarks upon the subject, I take it that a brief narration of my own personal experience will prove to be more interesting than were I to deal with the practice of others, the more especially as the operation which I have performed is more thorough than the usual procedure.

At the outset I will state that in the manage-

ment of so lethal an affection I have relied upon the scalpel, as I believe it to be the one and only measure which is capable of affording good results. It may be that some of my hearers are sceptical as to the propriety of interference. The old tradition that carcinoma is an outward evidence of a blood disorder, and that it cannot, consequently, be cured by operation, may still influence a few of our members. To these I may be permitted to say, first, that the leading minds of the world now admit that carcinoma is primarily a local growth; and, secondly, as I have elsewhere[1] conclusively shown, from an impartial examination of a large number of cases that the knife not only prevents the local dissemination of the disease, its extension to the lymphatic glands, and the occurrence of secondary growths in a large percentage of cases, but that it moreover prolongs life, and definitely cures one patient out of every eight and a half.

An operation in a suitable case having been decided upon, the one selected by the majority of surgeons is that with which we are all so familiar, namely, the inclusion of the nipple and a portion of the skin in two elliptical incisions, the reflection of the flaps, and the dissection of the gland from the surrounding tissues. Other surgeons, actuated by the desire to save as much of the gland as possible, limit their efforts to the extirpation of the tumor alone. The first of these procedures is faulty enough; the latter cannot be condemned in too severe terms; and yet, in his recent monograph on "The Operative Surgery of Malignant Disease," Butlin, I am sorry to say, recommends it. A knowledge of the changes which, starting from the tumor itself, ensue in the remainder of the breast, in the adjacent soft tissues, and in the associated lymphatic glands, which changes indicate the local extension of the disease along the lymph paths, ought surely to lead the surgeon to reject such irrational operations. In very exceptional instances a cure may be effected; but we all know what is the common result—a more or less rapid recurrence of the disease—a favorable issue being so uncommon after these incomplete operations that few, if any, of us have ever witnessed it.

Dissatisfaction with my own earlier results and those which I was enabled to follow in the practice of other surgeons led me, ten years ago, to adopt a radical procedure, the object being to effect riddance of all the tissues in which the experience of hundreds of years demonstrates that recurrence, or a new outbreak of the disease, takes place. Hence, in my operation, which is minutely described in the *American Journal of the Medical Sciences* for April, 1888, I amputate, by a circular cut, the entire breast with its overlying skin and fat, dissect off the pectoral fascia, and carry an incision into the axilla, through which I am enabled to extirpate its contents. If nodules should be found in the pectoral or intercostal muscles, they are also removed with an equally unsparing hand. The edges of the wounds are then approximated, the closure of the breast incision being greatly facilitated by raising the flaps from the subjacent tissue for 1½ to 2 inches, and the employment of button sutures. In some cases, the wound cannot be entirely united, so that it has to heal by the process of granulation.

In the discussion which will follow the reading of my paper, I will doubtless be asked, first, Why do you remove the entire breast and its surrounding tissues? and secondly, Why do you attack the axilla in all cases? My answer is, simply because recurrence, or a new outbreak of the disease, ensues in tissues which are left behind in the less radical modes of operating. The accumulated observations of surgeons show that recurrence may be anticipated in the skin and subcutaneous tissues, especially at or near the cicatrice; in the fascia covering the pectoral muscles; in the remnant of the breast from which the tumor alone was excised; in outlying lobules which were overlooked during the performance of the less complete operations, and in the lymphatic glands, particularly those of the axilla.

Answering these questions more fully, I would say that sound pathology, as well as experience, demands that the entire mammary gland, along with its circumjacent tissues, should be amputated, first, because we have to deal with a carcinomatous degeneration commencing at one point from which the cells migrate in various directions into the remainder of the breast and the surrounding tissues, the extent of which migration into the lymphatics and their radicles it is impossible to determine with the naked eye; secondly, because the disease is sometimes multiple, and the smaller growths are only detected on examining the breast after its removal; thirdly, because minute lobules frequently lie at some distance from the main body of the gland, particularly toward the axilla and the clavicle, which may subsequently become the seat of a new outbreak, even as late as ten years, as in a remarkable instance recorded by Banks; and fourthly, because nodules may be found in the subcutaneous tissues at a relatively great distance from the breast, which would certainly have escaped detection in the lesser operations.

My answer to the second question, Why do you attack the axilla in every case? is, because the axillary glands are almost always diseased, even though they cannot be felt prior to operation. Of my 45 cases, the glands were not palpable in 18, but in 15 of these they were present when the axillary space was opened. In 57 out of 65 similar cases, Kuester found that the glands were infected, so that our combined experience demonstrates that the glands are invaded in 86 out of every 100 cases in which there is no ex-

[1] American Journal of the Medical Sciences for April, 1888.

ternal evidence of their implication. Hence, if the axilla be not evacuated of its contents in every case, a subsequent operation will almost surely be demanded. In point of fact, I consider this step as the keynote of the procedure, and I refuse to operate if I am not permitted to have my own way in this regard.

Although the procedure which I have described may appear to be unnecessarily severe as to the sacrifice of tissue and, at first sight, seem to be attended with more risk than operations performed with a more sparing hand, I have still to present some facts which conclusively show that it is the best that has as yet been practiced as regards mortality, freedom from local recurrence, and a final cure.

Of my 45 cases, 2, or 4.44 per cent., perished from the operation, and 5 patients were lost sight of after recovery. Deducting the 7 that died and could not be traced, 38 cases show local recurrence in 11, or 28.95 per cent. Including the deaths, out of 40 cases, 9, or 22.5 per cent., recovered. Of these, 1 died of an intercurrent disease in 7 years and 10 months, while the remainder are still doing well, 1 for 9 years and 10 months, 1 for 9 years and 1 month, 1 for 6 years and 9 months, 1 for 4 years and 3 months, 1 for 3 years and 11 months, 2 for 3 years and 6 months, and 1 for 3 years and 5 days.

Let us contrast these results with those afforded by the next best operation, namely, the removal of the breast by flaps and the evacuation of the contents of the axilla in every case. Of 328 cases of this description in the hands of Banks, Kuester and von Bergmann, 10.67 per cent. perished, there was local recurrence in 54.92 per cent., and 15.15 per cent. were cured, so that my operation is safer by 6.23 per cent., is less liable to local recurrence by 25.97 per cent., and affords 7.35 per cent. more of permanent recoveries.

It is quite certain that the greater immunity from local reproduction of the disease in my operation is due to the total amputation of the breast, its skin, and enveloping fat. Despite the fact that my results are better than any that have heretofore been recorded, a careful examination of the cases of Banks shows that he met with only 3.88 per cent. more of recurrences than I have, and that his percentage of recoveries, viz., 20.77, is only 1.73 per cent. less than my own. Hence, I felt that I might possibly have sacrificed too much of the skin; and, since June, 1887, I have so far modified my operation in 10 cases, the skin in none being apparently affected, as to save enough of that structure to admit of nice approximation of the edges of the wound. All recovered from the operation; one died from recurrence in the axilla and metastasis; one is living with axillary reproduction; in not one has there been local reproduction; one patient is free from disease at the end of fifteen months; one for one year; one for nine months; and the remainder for periods varying between three and eight months. These cases can be followed, and whenever I am sure of being able to trace my patients, I shall give this procedure a fair trial. When, on the other hand, the patient lives at a great distance, or her circumstances are such as to prevent her visiting me in the event of recurrence, I will adhere to the more extensive operation.

Dr. James Collins: I have on two or three occasions, in the case of small tumors in comparatively young women, allowed myself to be over-ruled by the patient and her friends, who urged that it would be a pity to sacrifice so much of the breast as I proposed, to performing a restricted operation; but I have regretted it in every instance, and I can assure Prof. Gross that I will never offend again. That which Dr. Gross describes as the "second-best operation," the large elliptical incision with thorough removal of tissues beneath the skin and exploration of the axilla is the one I have practiced in the majority of my cases. The prolongation of life in those I have been able to follow would average not quite three years.

The great difficulty we have to contend with in mammary tumors is to secure consent to an early operation. Patients go from surgeon to surgeon, and from city to city, and finally yield consent as a last resort or in deference to an authoritative opinion; usually too late to escape recurrence. The recurrence which then takes place, despite skilful operation by a distinguished hand, will be cited in discouragement of timely operation in other cases, by a large circle of relatives and friends.

The exploration of the axilla, which the lecturer in his masterly demonstration has so justly emphasized, should never be omitted. Nor is it too trite a remark to recall that antiseptic methods, which have so improved the results of extended operations, should here also remove any lingering dread of opening up large spaces; for they have improved the outlook of the procedure by assisting the rapidity of healing, and excluding the danger of septic accidents and sequelæ.

Dr. O. H. Allis: I have nothing to add in discussion; I have repeatedly seen Prof. Gross operate, and there is one point in his method of operation to which I would call especial attention. The breast having been covered for twenty-four hours with antiseptic solutions and his hands being thoroughly aseptic, he carefully palpates the pectoral region for outlying nodules, marking the site of any that he finds with a pencil-stroke, and when he operates he does not dissect out these places, but includes them well within the sweep of the line of incision. In other words, he cuts beyond the outer limits of the disease.

Dr. John B. Roberts: Dr. Gross has for

many years taught us all the proper way to remove a breast, that is, to remove it thoroughly. In my own operations, I have, whenever possible, employed the large elliptical incision; the advantage, and I confess the only one, being that when approximation of the edges of the wound is at all possible, it can by this method be more readily effected. No one who has learned from Prof. Gross the proper way to open the axilla would dare to neglect this portion of the operation. As to aseptic and antiseptic methods, there can be no difference of opinion among experienced operators; they are the only methods permissible in operative surgery. I would like to ask Dr. Gross how long it takes to repair one of the large spaces in what he calls the dinner-plate incision, and what his opinion would be as to the prospects of a plastic operation to aid in hastening healing.

DR. R. BRUCE BURNS: Of all surgical cases these are the most unsatisfactory. In my earliest operations I did not open the axilla. Three cases operated on in this way are living for eleven, nine, and five years respectively. Of later years I have opened the axilla, and have been unfortunate. Recurrence has taken place in the cicatrices and even in the axillary tissues, perhaps in small glands not removed. I have thought, perhaps, it recurred in the adipose tissues. I have usually employed the elliptical incision. The method of leaving a large open wound to heal by granulation is rather hazardous. In all cases where I have had to depend upon extensive granulation there has been rapid recurrence and metastasis. There may also be limitation of the movements of the arm from matting of the tissues. It is wise always to attempt to secure union by first intention. It would be well to attempt to remove outlying nodules in the surrounding tissues. Where nodules occupy a portion of the gland (mammary) and are intimately attached to it, the whole organ should be removed.

Antiseptic measures are only so far useful as, in arranging them, you secure aseptic conditions. I believe thorough cleanliness in all respects, as to instruments, dressings, and the surgeon's hands, with good drainage, is all that is necessary in the treatment of the wounds of operations.

DR. GROSS, in closing the discussion, said: There are many points which might have been touched upon in the paper which I omitted for the sake of brevity. Societies do not like to listen to long papers, and the best speakers teach little in long papers. The points I have tried to emphasize are, the importance of a thorough operation, and the fact that its results are better than those of incomplete operations.

Now as to primary union. Of course, I want to get primary union whenever I can. Those who have never seen my operation would be surprised to see how close an approximation we can get by sliding the bistoury under the skin, say for from one to two inches, and then drawing the loosened flaps together with buttoned sutures.

Sometimes when there has been very extensive disease, necessitating correspondingly extensive operation, we have a gap left to granulate of two or three fingers' breadth—never more than three fingers' breadth. Healing may be slow in a debilitated subject with a large wound, but averages about six weeks.

Now as to saving the breast, and only removing the tumor itself—I do not care for the breast. It is of no use. I am concerned in getting rid of all diseased tissues. What surgeon would undertake to remove a sarcoma of the thigh, for example, and for the sake of leaving a little more stump, make his flaps through infiltrated tissue? I should consider such a procedure criminal. Yet it is just what some surgeons want us to do in the breast.

In my last ten cases I did, for reasons stated in the paper, the lesser operation, and if I find it equally satisfactory in the end, I will adopt it altogether. I am not wedded to one operation, only so far as not only personal experience, but the combined statistics of several operators with good results show that my operation has given the best results.

Dr. Burns has had an experience of coincidences. In the cases in which he did not open the axilla and recovery took place, he had a free axilla. I judge that the doctor thinks recurrence takes place in granulations. Now it is a histological fact that granulation tissue will give rise to granulation tissue alone, and not to epithelial tissue. The granulating surface may be great or small; that has nothing at all to do with recurrence. In those other cases all the disease was not removed, and hence development again took place in the tissues forming the bond of union, or the tissues near the cicatrice.

As to aseptic surgery, I can only say that if anyone has been taught the modern methods and neglects them, and death occurrs from erysipelas, pyæmia or septic complication, he cannot be held irresponsible.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Communication of the Amniotic Liquor and Maternal Blood—Clinical Urology of Small-pox—Relation of Ophthalmic and Dental Disorders—Time for administering Certain Drugs.

In a note in the *Archives de Tocology* on the communication of the amniotic liquid and the maternal blood Dr. Törngren remarks that the

former experiments of Gusserow, Fehling and Quinquaud had clearly established that soluble substances introduced into the circulation of the mother entered the ovum. Experiments were equally performed by Savory, Gusserow, Preyer and Bar in the opposite sense, to establish the passage in the "matripetal" direction. But how the substances injected into the amniotic liquid returned in the maternal circulation was a point not very clearly elucidated, and it is this that Dr. Törngren endeavored to establish in his experimental work executed under the direction of Professor Strauss. He was able to establish, with Drs. Bar and Haidlen, that an absorption by the mother certainly took place of substances contained in the liquid of the amnios. As regards the channel followed for this absorption, the results are not absolutely decisive. Contrary to Schultze, Dr. Törngren, however, thinks that the absorption is not effected by the medium of the fœtal organism (the child taking in in the first instance by deglutition the amniotic liquid), but principally by the placenta or the membranes. These experimental facts, observed in the rabbit, found their analogies in the anatomical researches made by Winkler on the placenta of the human female. He established that in the placental portion of the chorion and of the amnios canalicules exist which communicate with the amniotic cavity.

Dr. Robin has lately made a very interesting communication to the Academy of Medicine on the clinical urology of small-pox, a question whch had never been treated in a systematic manner. The researches of Dr. Robin have led him to establish in small-pox four varieties of albuminuria: 1. Prevariolic albuminuria, occurring before the eruption. It is grave when it is abundant. Only one case of the kind has ever been known. 2. Transitory albuminuria. This is a little marked and shows itself at the outset of the eruption and of suppuration. It is of no diagnostic or prognostic value. 3. Abundant albuminuria, coming on at any period of the acute stage. This is rare and of a grave prognosis. 4. Albuminuria of convalescence, which should be divided into two varieties. The first accompanies or precedes the febrile returns of convalescence, or a tardy complication: abscess, parotiditis, etc. It is transitory, little abundant and without serious prognosis. The second is analagous to post-scarlatinal albuminuria and, like this, proceeds from a particular form of nephritis termed variolic nephritis, the anatomo-pathological characters of which have been lately studied by M. S. Renaut, of Lyons. The pathogenic conditions which favor the appearance of albuminuria are still rather obscure. The examination of the greater part of observations published leads to this eclectic conclusion, that the two principal predisposing factors of secondary variolic albuminuria are the intensity of the malady on the one hand, and the bad general condition of the patient on the other. As to the exciting cause, it is not precise in any case outside common cold, which figures in all the etiologies. To impute it to parasitism is evidently that which is the most rational in the present state of our knowledge.

In a lecture on the relation of ophthalmic to dental disorders, Dr. Galezowski, the well-known ophthalmologist, dwelt on the close correlation between some eye troubles and caries of the upper teeth. In young children, the slight inflammation and discomforts accompanying the cutting of the first teeth produce keratitis and small corneal ulcers, and these can sometimes be cured by treatment of the teeth. In the shedding of the first teeth a spasm of the eyelids is sometimes observed, which can be removed by extracting the teeth. With the shedding of the wisdom teeth corneal inflammations occur. In adults, the commonest result of dental caries on the eyes is a weakening of accommodation by reflex action through the fifth pair of nerves. Of this the author gives two examples. An American lawyer had had for two years such weakness of accommodation as to make his work almost impossible. There was no hypermetropia or astigmatism, but two of the molars of the upper jaw were decayed and stopped with gold. Dr. Galezowski advised their extraction, and in a few days his patient was able to resume his work. From this it was concluded that the patient's troubles arose from compression of the dental nerve. In another case in which the weakness had lasted for three years, it improved greatly soon after the extraction of a single molar. There was also a case of temporary but almost complete functional blindness following extraction of an upper molar in a man aged 20, who was under the care of Professor Richet at the Hôtel Dieu. Conversely, in a nervous woman, a patient of Galezowski, who had amaurosis of one eye, perfect sight was immediately recovered by removal of a carious molar tooth on the same side.

The *Revue Internationale* has published a note on the proper time for the administration of certain drugs. The alkalies should be taken before meals. Iodine and its derivatives should be taken when the stomach is empty, they are then more rapidly diffused in the blood. During digestion they are decomposed by the acids and starch, and consequently lose their properties. Acids should be administered between meals; if the gastric juice is very acid, they should be taken immediately before meals. Irritant or dangerous substances such as arsenic, copper, zinc, iron, etc., should be taken before meals. The nitrate of silver should be administered before meals. Corrosive sublimate and the greater part of metallic salts should be taken when the stomach is empty. The extract of malt, cod-liver oil, and the phosphates are administered preferably during meals or immediately after. A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM AN OCCASIONAL CORRSPONDENT.)

New York State Medical Association—Puerperal Septicæmia—Are Puerperal Febrile Disturbances due to Microörganisms—The Etiology of Puerperal Fever—Conditions Predisposing to Puerperal Septicæmia—Pathology of Puerperal Septicæmia.

The recent meeting of the New York State Medical Association, which was held at the Hotel Brunswick, October 9, 10 and 11, was a very successful and attractive one. The attendance was somewhat larger than last year, and the banquet on the evening of the second day was a most enjoyable affair. Professor William T. Lusk, of Bellevue Hospital Medical College, was elected President, and Drs. Ferguson and Hinton were, of course, reëlected Secretary and Treasurer. The Vice-Presidents chosen were as follows: First District, Dr. S. H. French, of Montgomery Co.; Second District, Dr. R. C. McEwen, of Saratoga Co.; Third District, Dr. Elias Lester, of Seneca Co.; Fourth District, Dr. T. D. Strong, of Chautauqua Co.

The elaborate programme, that has already been published in THE JOURNAL, was faithfully carried out, and, as in previous years, the set discussions on subjects of general scientific interest were the main feature of the session. Probably the most entertaining contribution was the address on Medicine, by Dr. Shrady, who took for his subject, "Medical New York in 1800."

The discussion on *Puerperal Septicæmia* was introduced by Dr. C. C. Frederick, of Buffalo, who stated that as the danger of infection in any case was in direct proportion to the avenues of approach left open for the invasion of sepsis, the importance of prophylaxis was evident. The strictest antiseptic precautions, he thought, should be observed in every case of labor, and among the measures that he advocated was the use of a vaginal douche of bichloride solution (1 to 3,000) before delivery. The placenta should always be removed with the patient on her back, in order to prevent the ingress of air which was likely to take place if she was in Sim's position. After delivery the perineum should be examined, and sutures applied if there was any rupture. If for any reason it was necessary to introduce the hand into the uterus, an intra-uterine injection of bichloride solution (1 to 4,000) should be subsequently employed. He advocated the use of the antiseptic pad, and thought post-partum vaginal injections were unnecessary. When the bowels or bladder were evacuated the patient should be raised to the upright position, in order to drain the uterus and vagina.

As regards the prognosis of puerperal fever, he said that the purely septic forms were the most dangerous, unless the conditions were promptly and thoroughly treated. When septic germs had once gained entrance into the blood and the lymphatics they were beyond the reach of the physician; but further infection could usually be prevented, and if the patient's strength could be kept up, the hope might be entertained that the poison would be eliminated from the system. He regarded putrid lochia as one of the most potent causes of sepsis.

When septicæmia declared itself vaginal injections of bichloride solution (1 to 2,000) should be employed at intervals of from three to six hours, according to the urgency of the symptoms; and after the use of the douche the patient should be required to sit upright for a moment, so as to drain the parts. All necrosed patches in the genital canal should be touched with a mixture of persulphate of iron solution and compound tincture of iodine, as recommended by Lusk, and if there are any diphtheritic patches, the chloride of zinc should be employed, as advocated by Garrigues. Dr. Frederick thought it probable that the intra-uterine douche had been resorted to too frequently, and that the real benefit in most of the cases when it was used resulted from vaginal irrigation. Among the dangers likely to arise from this practice was one that had been overlooked, viz., that of conveying septic material from the vagina into the cavity of the uterus. If the intra-uterine douche were deemed necessary, the patient should be placed in the lithotomy position, and from one to three pints of bichloride solution (1 to 4,000) carefully injected. Afterwards the uterus should be squeezed dry, a pencil of iodoform inserted into its cavity, and a dose of ergot administered to insure contraction. In controlling high temperature antipyrin, and preferably antifebrin, was frequently of service.

The first question propounded, *What facts can be cited in support of the doctrine that the puerperal febrile diseases owe their origin to the action of microörganisms?* was discussed by Dr. H. M. Biggs, of New York. He said that the natural resistance of the tissues must first be overcome before septic germs could obtain an entrance, and in the normal parturient woman the lochial discharge and the abundant secretions of the parts continually protected the wounded surfaces. The uterus was also kept tightly closed by its own contractions, and the epithelium of its cavity occluded its orifices with an impenetrable shield. If, however, anything occurred to diminish the quantity of the lochia—if the uterus did not contract properly, if the vital resistance of the tissues are reduced by depressing influences of any kind, or if portions of membrane or blood-clot were retained in the uterus, and if under any of these circumstances microbes were introduced, it was evident that the most favorable conditions for the development of puerperal septicæmia were present.

With these points in view, it was easy to understand how the use of antiseptic precautions was so efficient in preventing this condition. If, in the first place, an antiseptic vaginal douche was employed during and immediately after labor, and if, in the second place, an antiseptic dressing were kept applied after delivery, impaction was much less likely to occur than if these measures were not resorted to, and if it did occur, it was apt to do so at a later period, when a better opportunity was afforded for counteracting its effects. The different conditions met with in different cases explained the various forms of puerperal septicæmia met with. After death pyogenic organisms had been met with in the milk-glands, in the lymphatics, and in the various organs throughout the body, and it had been demonstrated that they were eliminated during life by the kidneys and other emunctories. The *streptococcus pyogenes* was found in a large number of cases, and it was probable that this microbe was identical with the *streptococcus* of erysipelas. The next most common bacillus met with was the *staphylococcus*, the ordinary microbe of suppuration.

The puerperal febrile diseases were, therefore, a class of affections closely allied to infectious surgical diseases. The bacilli of the latter were known to be capable of producing all the conditions met with in puerperal septicæmia. The abolition of the latter from maternity hospitals constituted one of the most remarkable chapters in the history of bacteriology, and hence the conclusion could not be avoided that these diseases were of bacterial origin.

The second question was, *Is there a specific febrile disease peculiar to the puerperal woman, or are the various forms of puerperal fever the result of septic or putrid infection similar to or identical with that familiar to surgeons as septicæmia? What etiological relations exist between the zymotic diseases and some forms of puerperal febrile diseases, and in what manner are the zymotic modified by implantation upon the puerperal state?* It was discussed by Drs. E. D. Ferguson, of Troy, and S. B. W. McLeod, of New York. Dr. Ferguson said that he had no hesitation in answering the first part of this question in the negative. In our present state of knowledge the theory that puerperal fever is a specific disease seems no longer tenable, and at the last important discussion on the subject in this country, viz.: that before the New York Academy of Medicine in the winter of 1883–4, the only participant who advocated the specific character of the affection was Dr. Fordyce Barker. When fever occurred *ante-partum*, as was undoubtedly occasionally the case, it was more reasonable to suppose that it was due to some of the causes which might give rise to pyrexia at any time, rather than to a specific puerperal fever without any anatomical basis.

As regards the second part of the question, he said it could be shown that pregnancy did not afford immunity from any of the zymotic diseases. It was necessary to distinguish between those cases in which the zymotic disease complicated the puerperal fever, and those in which the zymotic infection gave rise to the puerperal fever. With regard to diphtheria, he desired to enter a protest against regarding every case of membranous exudation as one of true diphtheria. The zymotic diseases were apt to be more or less modified by implantation on the puerperal state, and the mortality was often increased, especially when pelvic inflammation was present. The diminution of the red corpuscles and the increase of fibrin in the blood resulting from pregnancy might perhaps explain to some extent the greater severity of the zymotics, as a rule, in parturient women. In cholera, however, the mortality was apparently not increased in pregnant women. Small-pox was noted for its mortality in this class, the death-rate ranging from 20 to 40 per cent. It frequently caused abortion, which was apt to be followed by the death of the patient; and the same was true of scarlatina and measles. The relation between erysipelas and puerperal fever had long been well known. This disease was not so fatal, however, if care was taken to avoid infection of the genital tract.

Dr. McLeod said in the course of his remarks that it might in general be stated that puerperal fever was a complex disease, depending on a variety of causes, although dependent in most cases on surgical septicæmia. The test of treatment, as shown by the remarkable success of antiseptic midwifery, conclusively proved this.

Drs. F. W. Ross, of Elmira, and John Shrady, of New York, discussed question 3: *What conditions of the woman predispose to the development of puerperal septicæmia? To what extent are the accidents of childbirth, together with the manipulations of the accoucheur, to be considered as etiological factors in puerperal infection? Are there any antiseptic measures before, at, or after labor, under any and all conditions or complications, that may be relied upon as prophylactic to puerperal septicæmia?* Dr. Ross said that no iron-clad rules could be laid down for prophylactic treatment, but the observance of certain measures, with due regard to the condition and surroundings of the patient, would, in general, be of service. In the first place, the woman should be placed in the most perfect health attainable, both general and local, before her confinement. At the time of labor she should have plenty of pure air, and all things about her should be scrupulously clean; efficient antiseptic solutions being employed to secure this end. If the perineum were ruptured, either sutures should be put in or antiseptic protection afforded to the parts. Antiseptic injections might be judiciously used, if called for, before, during or after labor.

Dr. Shrady said that one of the most important predisposing conditions was a lowered vital tone; and this view was supported by the bacterial origin hypothesis, because it was well known that healthy tissue constitutes the great barrier against microbic infection. The primary channel of infection was the genital tract, and experience had taught the advisability of making infrequent vaginal examinations.

The question, *What is the pathology of each of the several forms of puerperal septicæmia? What conditions or circumstances incident to puerperal septicæmia, and what forms of the disease, tend to render it fatal?* was discussed by Dr. Frank Graaer, of the Carnegie Laboratory. Drs. Wm. T. Lusk, of New York, and R. L. Banta, of Buffalo, discussed the last question, which was as follows: *What plan of antiseptic treatment can be employed with a large degree of success in each of the several forms of the disease? Does every rise of temperature above 100° F. in the puerperal woman constitute an indication for immediate resort to irrigation? When should irrigation be intra-vaginal and when intra-uterine? When irrigation is employed, how often should it be done, and when should it be discontinued? What hygienic, medicinal and dietetic treatment is to be used, in addition to the local antiseptic measures? To what extent should alcoholic stimulants and antipyretics be used?*

Dr. Lusk said that in the midwifery of the future there was reason to believe that there would be no occasion whatever to discuss the treatment of puerperal septicæmia. In his opinion this condition ought never to follow a properly conducted labor. In the Emergency Hospital in New York, where the number of confinements averaged 220 annually, the mortality from puerperal septicæmia had been reduced to *nil*, and it was actually the case at the present day that the women confined in lying-in institutions fared better as regards this affection than private patients surrounded by all the aids that wealth can command. The very fact that a place was given to such a discussion as this on the programme of the Association, showed, indeed, that the necessity and efficacy of preventive treatment were not yet as fully appreciated by the profession at large as they ought to be; and he could not but believe that one reason why this was so was because that when antiseptic prophylaxis first came in vogue it was taught that the removal of the carpet, upholstery, etc., from the chamber, and other such extreme measures, were required, and the difficulty of carrying out such a plan of procedure, which was altogether unnecessary, had proved a stumbling-block to many practitioners.

In the first place, both the physician and the nurses should understand the necessity of surgical cleanliness, and soap and water and corrosive sublimate be the means by which this could best be obtained. The hands and forearms should be washed with bichloride solution, just as if laparotomy were to be performed, and the patient's genitals, abdomen and thighs should also be bathed with it. Vaginal injections with the bichloride solution during labor are a valuable safeguard against self-infection. All unnecessary manipulations, such as attempts to dilate the cervix with the fingers, should be avoided. The complete removal of all the membranes should be carefully looked to in the third stage of labor, and Dr. Lusk said that in order to secure this he always employed a strong light so that he could readily see what he was doing. If it was necessary at any time to introduce the hand into the uterus the cavity should be afterwards washed out with a solution of carbolic acid.

To prevent germs from entering the tissues to dangerous extent, nothing, he said, would seem, at first sight, so efficient as irrigation; but uterine irrigation was not devoid of risk, and this method of procedure really left out of account the great bulk of puerperal inflammations. Experience had shown that if the uterine douche were employed regularly at four hours intervals the mortality would be considerable. It was a point worthy of note that a rise of temperature did not constitute at all the indication for a resort to uterine irrigation. The true indication was a large, flabby uterus, with retained membranes, portions of placenta, or blood-clots.

In using the uterine douche a glass tube was preferable, and carbolic acid solution was the most satisfactory fluid for the purpose. It should be preceded by a vaginal douche, and the quantity of fluid employed should not be large—never exceeding two quarts. The stream should be continuous, and not interrupted. It was important that a free exit for the fluid should be secured, and after the douche had been finished pressure should be made upon the uterus to facilitate contraction and the expulsion of any of the solution that might remain in the organ. He had found it a good plan to have a pencil containing a drachm and a half of iodoform in the cavity of the uterus. The mistake was often made of resorting to the uterine douche too frequently. It was his practice to give a second douche at the end of twelve hours, if it was required; but a third was rarely needed. Dr. Lusk stated that he still had faith in the efficacy of the vaginal douche in almost all the varieties of puerperal fever, as it certainly promoted uterine contraction, and was generally very agreeable to the patient.

In every case of increased temperature after parturition the first thing to do was to make a careful examination of the vulva and vagina, and if ulcerations were found to apply caustic. The use of ice-bags on the pelvic region was generally of service. The chief danger in puerperal septicæmia was from weakness of the heart's action, and this was to be counteracted by alcoholic stim-

ulus, abundant liquid food, and such agents as strophanthus. In all cases of fever following parturition suitable nourishment and alcohol were indispensable. The most careful attention to the hygienic surroundings of the patient was, of course, called for. In the severest cases the ice-coil was undoubtedly useful, and Runge had recently reported very favorable results from the employment of tepid water in lymphatic septicæmia, These results were the more remarkable from the fact that this was the most fatal variety of puerperal fever, and the method was certainly worth trying. P. B. P.

The Acid Treatment of Yellow Fever and other Fevers, and Scorbutic Conditions Generally.

Dear Sir:—In view of the ravages of yellow fever in the South and elsewhere, it is the bounden duty of physicians to resort to all promising means of relief to prevent and stay its destructive course, and for this purpose I desire to invite attention again to the great value of the acids and acidulous substances in the hygienic and medicinal treatment of all such diseases, and particularly to the superior sanative properties of nitro-hydrochloric acid as a germicide, antiseptic, febrifuge, alterative, hæmostatic, tonic, etc., in contagious, infectious and pernicious fevers, as well as analogous diseases, both internally and externally, as a prophylactic and curative. I can truly testify to the great practical utility of nitro-hydrochloric acid in inflamed and festering throat, diphtheria, scarlet, variolous, puerperal, typhus, ship, malarial, bilious, and other fevers, with their allied toxic, putrid and scorbutic conditions, constitutional and local, but have had no practical experience with it in yellow fever, though I believe it will prove equally efficient therein as in the former. For a general summary of its medical properties and applications I refer to my previous article thereon, in THE JOURNAL, vol. x, p. 65.

Both as a preventive and remedial agent nitro-muriatic acid is very efficacious in all such diseases, and may be taken freely in doses of from two to four drops of the strong acid in water or lemonade, through a glass, straw, or other non-corrosive tube, except in edentulous children and adults, by draught or sipping a little at a time, as a refreshing, purifying beverage and healing medicine, according to necessity. It is simple, safe, properly diluted, prompt, active, cheap, and easily procurable almost everywhere. It will not interfere with the usual remedies except in the case of calomel, which it converts into corrosive sublimate, and would thus prove dangerous in undue quantities, but in small doses beneficial, as it is compatible with hydrarg. bichloride, which might be substituted for the calomel, it being also a powerful germicide, alterative and resolvent, and the two together would be doubly remedial.

Other acids, mineral, vegetal and animal, as muriatic, nitric, sulphuric, bromohydric, phosphoric, salicylic, etc., and lemonade, vinegar, sour buttermilk, with acid fluids, fruit, and food generally, sweetened to taste, are also applicable according to special indications. I firmly believe that the acid regimen and medication will greatly mitigate if not absolutely avert and resolve the scourge of yellow fever, with all other contagious, infectious, and pernicious fevers, and scorbutic conditions, hence strongly urge their use therein, both for preventive and curative purposes.

GEO. J. ZIEGLER, M.D.

Philadelphia, Sept. 30, 1888.

Abortion Laws.

Dear Sir:—In your most able and kindly editorial on "The Ethics of Marriage," in THE JOURNAL for September 1, there has, in some way which I cannot understand, crept in a mistake as to the abortion laws referred to in the tabular view in the appendix. I notice that a correspondent in your issue of September 22 naturally feels aggrieved at the seeming aspersion on his State.

This tabular view shows that thirty-eight States and Territories punish the attempt to perform abortion, and no less than eighteen punish advertisements looking to that end. The book has already—since May—passed into a second edition, and at first I thought the tables might have become confused in this, but, referring to a copy lately received from the publishers, I find them all right.

Will you kindly make correction in some future issue of THE JOURNAL, and greatly oblige Yours truly, H. STERLING POMEROY, M.D.

341 Boylston St., Boston, October 12.

BOOK REVIEWS.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA, at the Thirty-ninth Annual Session, held at Philadelphia, June, 1888. Published by the Society. 8vo, pp. 355.

The first literary contribution to this volume is the Presidential Address of Dr. Richard J. Levis, on "Traditional Errors of Surgery." Among the traditional errors pointed out are those pertaining to the differentiations of surgical practice called specialism. "The greatest advances in surgical science and art, at the present time, are made through special attention to certain lines of study and practice. This differentiation by specialism is justified by the advance of these lines beyond the possibility of any indi-

vidual practitioner ever comprehending all that can be known in them." Specialism must be intelligently guarded, however. It is a superstructure that must be built on a substantial generalism. As Virchow has said: "No specialty can flourish which separates itself from the common source of science. The great specialists, whose labors have borne most fruit, and added most to the stock of human knowledge, have been the men with a solid foundation of generalism. Dr. Levis recognizes this, and points out that the great danger of specialism lies in *exclusivism*—the study of and practice on distinct organs of the body without reference to their mutual and intimate relations and interdependence.

Dr. Levis then refers to the violent opposition to anæsthesia in 1846, to the denunciation of ovariotomy and ovariotomists, to the tardy recognition of Lister's principles of antiseptic surgery, and to the general tendency to make complicated surgical instruments and apparatus.

The addresses in medicine, by Dr. Edward R. Mayer, of Wilkesbarre, in Hygiene by Dr. Traill Green, of Easton, in Obstetrics by Dr. Parvin, in Mental Disorders by Dr. H. C. Wood, and in Otology by Dr. Alexander Randall, are well worth reading.

Dr. Frank Woodbury contributes a paper on "The effervescent form for the administration of certain remedies;" Dr. R. Lowry Sibbet one on "Decisions of the Courts relating to the Registration Act of 1881," in which he urges the necessity of a State Board of Medical Examiners. "The Proposed State Board of Medical Examiners" is the title of a paper by Dr. John H. Packard. Dr. Lawrence F. Flick contributes an admirable paper on "The Contagiousness of Phthisis," though we may not be prepared to accept his conclusions. A very interesting paper is one by Dr. Hugh Hamilton, on "The Chemical Factor in Disease." Dr. Mordecai Price has a short paper on "Removal of the Kidney for Traumatism," and Dr. John B. Deaver one on "Nephrectomy for New Growths." Dr. S. F. Davis makes an interesting report of a case of *removal of the uterine appendages as a remedial measure*. Dr. J. H. Musser read a memorandum of the life and works of Benjamin Rush. Dr. William F. Waugh read a paper on the "Specific Treatment of Typhoid Fever"—by sulphocarbolate of zinc, the use of which he believes is a legitimate deduction from the pathology of the disease.

Dr. Thomas D. Dunn read a paper on "The Hypodermic Use of Cocaine in Migraine and Bronchial Asthma," Dr. E. A. Wood, of Pittsburgh, one on the "Irrational Use of Commercial Pepsin," Dr. J. Chris. Lange, of Pittsburgh, one on "Some Influences of Diseases upon the Mind," Dr. Louis J. Lautenbach one on the "Prevention of Ear Disease, by Care exercised particularly in Childhood," Dr. Charles H. Burnett one on "Aural Vertigo," one on "Gouty Sore Throat" by Dr. Harrison Allen, Dr. A. G. Heyl one on "Two Retinal Symptoms in Brain Disease," and Dr. Chas. M. Dulles made a "Report on Hydrophobia."

The Pennsylvania State Society has just grounds for pride on account of the unusual excellence of the papers in this volume.

The Physicians' Leisure Library. THE INFECTIOUS DISEASES. By CARL LIEBERMEISTER, Professor of Clinical Medicine in Tübingen, Germany. Translated by E. P. HURD, M.D., Newburyport, Mass. With Notes and Appendices. Small 8vo, 2 vols., paper, pp. 141, 269, Detroit: Geo. S. Davis. Chicago: W. T. Keener. Price, 25 cts. each.

Dr. Hurd has contributed in no small degree towards bringing the writings and teachings of foreign medical men within the reach of Americans that do not read a foreign language, and his work has the peculiar merit of instructing the reader without allowing him to be aware that he has a translation.

The first volume of the work before us deals with the miasmatic and miasmatic contagious diseases; intermittent fever and typhoid fever. It should be said that the scope of the work is "The Pathology and Treatment of Infectious Diseases." Every one that has read anything from Liebermeister's pen knows that he is one of the strongest adherents to the germ theory of disease. To prevent making the present volumes too bulky the translator has omitted Liebermeister's chapter—a long one—on the nature of infection. In his appendix to the chapter on Malaria Dr. Hurd has wisely added some notes setting forth the treatment of intermittent fevers as practiced in this country; and as appendices to the treatment of typhoid fever he has made some notes in regard to the cold-bath treatment of typhoid fever, and has added a summary of the treatment of this disease in some of the principal American Hospitals.

The second volume deals with measles, scarlatina, smallpox, vaccinia, varicella, rubella, diphtheria. Dr. Hurd has also added to the value of this volume by notes.

On the whole one must commend this work from the pen of one of the masters of medicine, and so intelligently edited.

OPHTHALMIC SURGERY. By ROBERT BRUDENELL CARTER, F.R.C.S., etc., and WILLIAM ADAMS FROST, F.R.C.S., etc. With a chromo-lithograph and 91 engravings. 8vo, pp. 554. Philadelphia: Lea Brothers & Co. 1888. Chicago: A. C. McClurg & Co.

The authors have divided their book into fifteen chapters. The first deals with the anatomy and

physiology, the second with the examination of the eye. The other chapters are devoted to the afflictions of the various tissues of the globe and its adnexia. An appendix contains Snellen's Distance Types, Reading Types, Army and Navy Test Dots and Formulæ.

The book is well written. It is concise and abreast of the times. Drs. Carter and Frost have not limited themselves to outlining the successive steps in the advancement of our science, but discuss leading questions and clinch arguments by an array of numerous interesting questions and opinions, the result of long experience.

Dr. Carter is opposed to the new method of after-treatment in cataract extraction. He claims it is only a resuscitation of a procedure in vogue twenty-five years ago, which was condemned by Graefe, the originator of the pressure bandage. The author says, "The advantages to a healing wound of complete shelter and of gentle, uniform support is self-evident." The present method of operating for cataract without iridectomy is also denounced as an error and a departure from a reliable and safe method.

In the chapter devoted to advancement of the recti muscles allusion is made to the operation devised by Dr. Prince, of Jacksonville, Ill., erroneously located in Philadelphia. Prince's plan is slightly modified by the employment of only one suture, which after having transfixed conjunctiva and sub-conjunctival tissue is passed from without inwards through the upper part of the muscle and then again from within outwards through the lower part of the rectus. This brings the vertical portions of the thread, forming a rectangle, underneath the conjunctiva, the horizontal parts above that tissue. The ends of the thread are then tied, advancing the muscle and entirely covering the seat of operation.

The work abounds in good practical suggestions. It will prove especially welcome to the student owing to its completeness and terseness. It bears the stamp of originality, and consequently will be interesting and useful to physicians and specialists.

A MANUAL OF GENERAL PATHOLOGY. Designed as an introduction to the Practice of Medicine. By JOSEPH FRANK PAYNE, M.D., Oxon, F.R.C.P., etc., with 153 Illustrations. 8vo, pp. 560. Philadelphia: Lea Brothers & Co. 1888. Chicago: A. C. McClurg & Co.

The plan of this work is somewhat different from others that have the same title. The first half of the volume is devoted to a brief review of the topics usually described in works on general pathology, and the second half to a description of the causes of disease and their mode of action.

In the first portion we are glad to see chapters devoted to "pathological relation of blood-pressure" and "fever." These are subjects too frequently omitted from similar works. Inflammation is not considered by the author a conservative process. In his opinion, "inflammation is damage." The chapter on fever is a brief but fair review of the modern literature of the subject.

The second portion deals with topics of very great interest. Although nearly one-half of the volume is devoted to it, many of the topics are discussed too briefly, and many should be added to make it complete.

This work does not duplicate any other. It is excellent for what it purports to be, a Manual of General Pathology designed as an INTRODUCTION to the Practice of Medicine. It should not be used to displace other text-books on Pathology, but rather to compete with the early chapters of works on Practice of Medicine, which have been entitled by the older writers principles of medicine.

THERAPEUTICS. Its Principles and Practice. By H. C. WOOD, M.D., LL.D., etc. Seventh Edition of a Treatise on Therapeutics rearranged, rewritten and enlarged. Philadelphia: J. B. Lippincott & Co. 1888. Chicago: W. T. Keener.

This work of Dr. Wood's has become a classic, and the appearance of each new edition is looked for by the profession and by students of medicine with pleasure, for as an authority it is unquestioned. The present edition is so different in title, arrangement, and in the extensive revision of old matter and addition of new, that it marks an epoch in the history of the work.

So well known is this treatise that detailed notice is not necessary. We will remark only on a few of the most conspicuous changes. The title of the book is the first of these changes to attract attention. Very much more space is allotted to measures of treatment not medicinal than in former editions, and this part now constitutes the first division of the work instead of the last.

The classification of drugs has been considerably modified. For instance, quinine appears under the head of antiperiodics instead of tonics, and a group of antipyretics follows that of antiperiodics. It need not be said that most excellent descriptions of the physiological and therapeutic action of all the new drugs that can be considered reliable have been introduced.

MISCELLANEOUS.

TREATMENT OF FOUL SHIPS.—The Surgeon-General of the U. S. Marine-Hospital Service has issued the following circular to Medical officers of the Marine-Hospital Service, and others whom it may concern:

In order to stimulate ship-masters to aid in securing a clean ocean-going fleet, the following regulation concern-

ing the treatment of foul ships is hereby adopted, and will be observed at all National Quarantine Stations :

1. When a vessel arrives at any National Quarantine Station from an infected port, and requires disinfection, she will be subjected to *ordinary disinfection*, as provided in former regulations.

2. When any vessel shall arrive at a National Quarantine Station in such foul condition as to render her dangerous from a sanitary point of view, and is found to require cleansing and disinfection, having at any former time within one year been subjected to ordinary disinfection, such vessel will be required to undergo *extraordinary disinfection*, which, in addition to the ordinary measures will include holy-stoning, scraping, the taking out of rotten wood, a second disinfection, and interior repainting, all of which will be required before granting a certificate of free pratique.

CREMATION IN BUENOS AYRES.—During the past year 993 bodies were cremated in Buenos Ayres, of which number 742 were of persons dead of cholera, small-pox, and other contagious diseases.

THE REFORM OF CIRCUMCISION.—The Israelites of Paris recently appointed a commission of surgeons under the presidency of Zadoc Kahn, the Grand Rabbi, to consider what modifications might advantageously be introduced in the ritual of circumcision. They have published rules looking to more thorough cleanliness of the operator, of his instruments, and of the infant, and have decided to do away with the sucking of the wound after the operation.—*The Annals of Hygiene*, Oct., 1888.

A FEE OF £10,000.—Surgeon-Major Freyer, M.D., I.M.S., has received a fee of one lakh of rupees (£10,000 sterling) from H.H. the Nawab of Rampur, as a token of esteem as well as an acknowledgment of his valuable services in the successful treatment of himself and General Azimuddin Khan, the popular head of the Administrative Agency of the State, who had suffered for nearly three months from a malignant rheumatic fever ; his recovery has been the occasion of great rejoicing at Rampur. This is said to be the largest fee ever received by a medical practitioner in India, and probably has never been exceeded in any country.

MEDICAL EDUCATION OF CHINESE IN CHINA.—Dr. W. W. Myers' three pupils, who have completed a course of four years' instruction nnder his direction at Formosa, recently passed an examination in Shanghai. The result, with the percentage gained at the primary examinations in Hong Kong and Shanghai, was as follows : Goh Kitmoh, 72 per cent.; Chan Ching-hai, 68 per cent.; Li Tsun-fan, 66 per cent. Following the presentation of diplomas a detachment went through ambulance manœuvres, stretcher drill, dressing the wounded, and applying splints adapted from the Chinese umbrellas.—*The British Medical Journal*, Oct. 6, 1888.

DR. CHARLES W. PURDY will return from Europe about November 1.

DEATHS FROM CHLOROFORM.—During 1885, 1886 and 1887, nine persons died in Australasia while under the influence of chloroform, four of the cases being in Sydney.

PROFESSOR FR. SCHULTZE, of Dorpat, will take the chair at Bonn made vacant by the death of Prof. Rühle.

DR. PAGLIANI, Professor of Hygiene in Turin, has been appointed Director of the Institute of Experimental Hygiene in Rome.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from October 6, 1888, to October 12, 1888.

Major John W. Williams, Surgeon, on duty with battalion on Second Artillery, now at Ft. Wadsworth, New York Harbor, is granted leave of absence for one month, with permission to apply to the proper authority for an extension of one month. Par. 1, S. O. 209, Hdqrs. Div. of the Pacific, Governor's Island, New York City, October 4, 1888.

Major Frank Meacham, Surgeon U. S. Army, died at Ft. Douglas, Utah, October 9, 1888, at 1:20 P.M.

By direction of the acting Secretary of War, the following named officers of the Medical Department will report in person, on the dates set opposite their respective names, to the President of the Army Medical Examining Board, Army Building, New York City, for examination for promotion: Capt. James C. Merrill, Asst. Surgeon, October 16, 1888; Capt. George McCreery, Asst. Surgeon, October 16, 1888; Capt. Richard W. Johnson, Asst. Surgeon, October 9, 1888. Upon completion of their examination the officers named will rejoin their proper stations. Par. 5, S. O. 231, A. G. O., October 4, 1888.

Capt. William B. Davis, Asst. Surgeon U. S. Army, is granted leave of absence for six months, by direction of the acting Secretary of War. Par. 12, S. O. 232, A. G. O., October 5, 1888.

Capt. John M. Banister, Asst. Surgeon, leave of absence granted in S. O. 210, September 10, 1888, from this office, is extended one month, by direction of the acting Secretary of War. Par. 2, S. O. 232, A. G. O., October 5, 1888.

By direction of the acting Secretary of War, Capt. Louis H. Maus, Asst. Surgeon, is relieved from duty at Ft. Schuyler, N. Y., and will report in person to the commanding officer, Ft. Porter, N. Y., for duty at that post. Par. 10, S. O. 236, A. G. O., Washington, October 10, 1888.

Capt. William G. Spencer, Asst. Surgeon U. S. Army, is granted leave of absence for two months, by direction of the acting Secretary of War. Par. 11, S. O. 236, A. G. O., Washington, October 10, 1888.

Official List of Changes in the Medical Corps of the U. S. Navy for the Two Weeks Ending October 13, 1888.

Medical Inspector Adrian Hudson, ordered to Naval Hospital, Mare Island, Cal.

Medical Director A. L. Gihon, detached from the Naval Hospital, Mare Island, Cal., and proceed home.

Medical Inspector N. L. Bates, detached from the "Pensacola," and placed on waiting orders.

Surgeon W. G. Farwell, ordered to U. S. R. S. "Franklin."

P. A. Surgeon H. B. Scott, detached from the New York Navy Yard, and ordered to the Naval Hospital at Mare Island, Cal.

Surgeon A. F. Magruder, ordered to duty at Headquarters of the Marine Corps.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service, for the Four Weeks Ending October 6, 1888.

Surgeon George Purviance, to proceed to Washington, D. C., for special duty. October 3, 1888.

Surgeon G. W. Stoner, detailed as chairman of board to select site for marine hospital at Evansville, Ind. October 5, 1888.

Surgeon C. B. Goldsborough, leave of absence extended fifteen days on account of sickness. September 28, 1888.

Asst. Surgeon Seaton Norman, detailed as recorder of board to select site for marine hospital at Evansville, Ind. October 5, 1888.

Asst. Surgeon J. B. Fattic, to rejoin station at St. Louis, Mo. October 5, 1888.

Asst. Surgeon G. M. Magruder, to proceed to Way Cross, Ga., for special duty. September 15, 1888.

Asst. Surgeon H. D. Geddings, to proceed to Camp Perry, Fla., for special duty. September 15, 1888.